Connecticut River Bacteria Monitoring Project

FINAL REPORT
604b Project # 2009-13/ARRA 604

June 30, 2011

Pioneer Valley Planning Commission
Prepared by Anne Capra, AICP, Principal Planner

In Partnership with the Connecticut River Watershed Council
and
Massachusetts Water Resources Center at UMASS Amherst

American Recovery and Reinvestment Act Funds
From
Massachusetts Department of Environmental Protection
604b Water Quality Management Planning Program

EXECUTIVE SUMMARY

This study focused only on potential water quality impacts related to possible disease bearing organisms (*Escheria coli*). We did not attempt to examine other issues such as nutrient loadings, toxic substances, or other potential problems. All findings, conclusions and recommendations pertain solely to water quality related to use of the river for recreational purposes.

Our major findings are that relative to *E. coli* bacteria:

- *E. coli* levels by monitoring site were posted to the project website within 24 hours of sample collection http://www.umass.edu/tei/mwwp/ctrivermonitoring.html
- The more urbanized southern Massachusetts reach of the Connecticut River frequently exceeded primary contact recreation limits during wet weather and occasionally did so in dry weather at some sites. Site North End/Bassett Marina (MAC1) is of particular concern, as this site usually exceeded the contact limit, regardless of weather conditions.

Actual sources of bacteria loading have been identified in three tributaries and one source on the Connecticut River main stem as follows:

- Bassett Marina/North End Bridge on Connecticut River, Springfield – failing septic system
- Fort River, Hadley – probable dairy farm on Bay Road, Hadley
- Mill River, Florence – illicit connection at 16 Meadow Street, Florence
- Maple Brook, Greenfield – leaking municipal sewer siphon under Maple Brook culvert

As noted throughout the report, on-going bacteria source tracking activities are underway on nine of the eleven tributaries monitored:

- Mill River, Springfield
- Manhan River, Easthampton
- Fort River, Hadley
- Mill River, Hadley
- Mill River, Florence
- Sugarloaf Brook, Deerfield and Whately
- Bloody Brook, Deerfield
- Maple Brook, Greenfield
- Barton Cove, Montague and Gill Deerfield

The 2011 sampling season marks the fourth consecutive year of E. coli monitoring on the main stem of the Connecticut River. Funding for the project in 2008 and 2009 was provided by an EPA Targeted Watershed Initiative Grant to the Pioneer Valley Planning Commission. In 2010 and early 2011, funding provided by this MA DEP 604b Water Quality Planning Grant enabled the work to continue and perform bacteria source tracking on tributaries with potential illicit connections or other non-point sources. Beginning July 1, 2011, the project will continue the source tracking program and outreach to the public

with funding provided under the EPA Targeted Watershed Grant and grant from the Community Foundation of Western Massachusetts to the Connecticut River Watershed Council.

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DISCLAIMER / ACKNOWLEDGEMENT OF SUPPORT

This project has been financed with American Recovery and Reinvestment Act Funds from the Environmental Protection Agency (EPA) to the Massachusetts Department of Environmental Protection (the Department) under Section 604(b) of the Clean Water Act. The contents do not necessarily reflect the views and policies of EPA or of the Department, nor does the mention of trade names or commercial products constitute endorsement or recommendation for use.

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INTRODUCTION

The Pioneer Valley Planning Commission (PVPC), in partnership with the Connecticut River Watershed Council (CRWC) and the UMass Water Resources Research Center (WRRC), has been conducting monitoring for *E. coli* bacteria in the main stem of the Connecticut River and fourteen (14) tributaries to the river between June and October of 2010, and April to June of 2011. Funding for the project was provided by the Massachusetts Department of Environmental Protection through a Section 604b Grant.

The Connecticut River is not meeting Class B, fishable/swimmable bacteria standards in many urbanized areas, in part due to elevated bacteria levels from combined sewer overflows (CSOs) and urban stormwater[1]. Little information is available to the public on whether the river is safe for water-based recreation at any given location or time. Limited water quality sampling undertaken by consultants for the Connecticut River Clean-up Committee in the Holyoke-Springfield, MA reach of the river showed average *E. coli* bacteria levels during wet weather events of 7,480 colonies in Holyoke, 1,800 in Chicopee, and 1,267 in Springfield. These results were well above the single sample water quality upper limit of 126 colonies/100ml indicating impaired river water and failure to meet Class B water quality standards for recreational uses[2].

Monitoring funded under this 604b grant was a continuation of two previous years of monitoring funded through a U. S. Environmental Protection Agency Targeted Watershed Initiative (EPA TWI) Grant for the Connecticut River to the Pioneer Valley Planning Commission (PVPC). The EPA TWI Grant was awarded in partnership with the Franklin Region Council of Governments (FRCOG), the Connecticut River Joint Commissions (CRJC), and the University of Massachusetts Water Resources Research Center (WRRC). The EPA TWI project sampled 16 sites twice a week in two urbanized reaches of the river during the high-use summer recreation months of 2008 and 2009 - Massachusetts: Chicopee to Holyoke and Turners Falls to Greenfield; and one mixed urban/suburban/rural reach in New Hampshire and Vermont, from Lebanon and Wilder to Cornish and Weathersfield. All sites sampled were selected due to the high degree of use for swimming, boating, fishing and other river recreation at these locations. Samples were analyzed at four local wastewater treatment plants and a private laboratory. Data from this study can be found on the EPA TWI project website at http://www.cesd.umass.edu/TWI/TWI_Projects/Water_Quality_Monitoring/index.html .

Our current 604b project is a continuation of the EPA TWI monitoring described above, collecting *E. coli* data for a 3rd (2010) and part of a 4th (April –June 2011)year. Sampling began in May 2010 and continued through June 30, 2011. The project defines three tiers of monitoring sites:

[1] Carr, Jamie W., Laurie E. Kennedy. October 2008. Connecticut River Basin 2003 Water Quality Assessment Report.
[2] Metcalf and Eddy. 1988. Long Term CSO Control Plans for Springfield, Holyoke and Chicopee.

Tier 1 Sites - Include nine sites along the main stem of the Connecticut River in Franklin, Hampshire and Hampden Counties, essentially the border with Vermont to the border with Connecticut. These are the same sites sampled in 2008 and 2009 in the EPA Targeted Watershed Initiative monitoring program.

Tier 2 Sites - Are defined as those selected for initial screening via bacteria sampling.

Tier 3 Sites - Are defined as Bacteria Source Tracking (BST) sites that are monitored because results from Tier 2 sites suggest contamination in the vicinity. These Tier 3 sites may either be those initially selected as Tier 2 sites, or they may be found at locations not previously identified in Table 6 of the Quality Assurance Project Plan[3]; they will thus be "new" sites to be added to Table 6. This means that some Tier 2 sites may "graduate" to Tier 3 status.

Tiers 2 and 3 monitoring sites are on tributaries to the main stem of the Connecticut River that are suspected to be contributing bacteria loading to the main stem based on the land uses within the watershed and /or documented water quality impairments. These tributaries were identified based on the bacteria levels at the main stem sites, guidance from the project Advisory Committee and DEP (WERO and DWM), and the results of the 2008 and 2009 bacteria monitoring under the EPA TWI project. Most of the Tier 2 tributary sites are water bodies where little or no data about bacteria has been collected in the past and thus baseline bacteria data is of great importance. Tier 2 sites on tributaries along the entire main stem of the Connecticut River in Massachusetts were monitored at least three times per site, no less than one week apart in time per site, over a 6 month period for bacteria "screening level" sampling. Tier 3 monitoring sites were identified specifically for bacteria source tracking along those Tier 2 tributaries where bacteria screening results indicate bacteria levels in excess of secondary contact standards for *E. coli*. Tier 3 monitoring sites may include pipe discharges or in-stream grab samples, frequency of sampling dependent on results.

[3] *Quality Assurance Project Plan Version 1.0 for American Recovery and Reinvestment Act, Connecticut River Water Quality Monitoring Project 2009-13/ARRA 604, EPA RFA#10099*, PVPC and Jerry Schoen, UMass Water Resources Research Center, April 27,2010.

PROJECT APPROACH

Task 1 QAPP Development

The QAPP written by WRRC for the Tri-State Targeted Watershed Initiative (TWI) was used as a template and modified as follows:

- Sites and sampling schedules for bacteria and optical brightener monitoring were identified;
- A "roving site" monitoring strategy was articulated based on results from earlier sampling events to determine when and where additional follow-up sampling is advisable to locate (geographically) sources of high bacteria levels.
- SOPs for optical brighteners are included.

The QAPP, approved April 2010, is included in the Appendices.

Task 2 Volunteer Coordination and Training

WRRC, PVPC and CRWC held 2 training sessions for volunteer monitors, one for Franklin County reach and one for Hampden County reach, in early May of each of the two monitoring seasons (2010 and 2011). Training involved assembling monitoring kits for the volunteers and instructional packets including standard operating procedures for data collection. The trainings were held a few days prior to the first scheduled sampling event, and conducted partly as instruction in sampling methods and partly to schedule sampling dates and hand out equipment to volunteers. For volunteers unable to attend one of the two sessions each Spring, CRWC or PVPC staff provided one on one training.

PVPC oversaw coordination of the volunteers including solicitation of volunteers and monitoring site assignment for the main stem weekly sampling. CRWC coordinated volunteers for the Tier 2 and 3 sampling sites on tributaries in Northampton and sites in Franklin County.

For CRWC Tier 2 and 3 sites, volunteers were grouped into one of three "teams" based on geography of the sites: Maple Brook and Barton Cove was one group, Bloody Brook and Sugarloaf Brook was another group of sites, and the unnamed stream and Mill River in Northampton was the third site. Andrea Donlon accompanied volunteers on the first round of sampling for a given set of Tier 2 sample locations. After that first time, CRWC alerted volunteers to favorable weather conditions and they were able to go out themselves. On many occasions, however, the entire volunteer team was not available, so Andrea Donlon accompanied a volunteer.

Task 3 Site Selection

All sampling sites were selected due to the high degree of use for swimming, boating, fishing and other river recreation at these locations, and/or past recent E. coli results in excess of Massachusetts primary contact single sample standards (> 235 colonies / 100ml). Table 2 provides the location of CSOs on the Connecticut and Chicopee Rivers. This information was relevant to sampling site selection. Maps of the main stem sampling locations and all Tier 2 tributary sampling locations are included in the Appendices.

Prior to finalizing the Tier 2 sites, PVPC and CRWC contacted the local Departments of Public Works and/or Conservation Commissions to notify them of the project and seek input about monitoring sites, potential illicit connections, and location of stormwater outfalls.

Table 1 Main Stem Connecticut River Monitoring Sites

Site #	Site Name	Town	Site Rationale	Latitude*	Longitude
MAH1	Pioneer Valley Yacht Club	Longmeadow	Boat launch	42.063513	-72.59329
MAH2	Pynchon Point Park	Agawam	Fishing, picnic area, informal boat launch	42.0833	-72.585449
MAC1	North End Bridge/ Bassett Marina	Springfield	Boat Launch	42.1100833	-72.6128833
MAC2	Davitt Bridge/Granby Road	Chicopee	Fishing, boat launch	42.1504	-72.6069167
MAC3	Medina Street Boat Ramp	Chicopee	Boat launch	42.1533833	-72.6253833
MAH3	Jones Ferry River Access Center	Holyoke	Boat launch	42.172379	-72.629898
MAC4	Berchulski Fisherman Access	South Hadley	Boat launch	42.1945333	-72.59985
MAH4	Brunelle's Marina	South Hadley	Boat launch	42.2632	-72.5996333
MAG4	Barton Cove	Gill	Boat launch, picnic area, fishing	42.6015667	-72.5315

*Geo Coordinates Datum NAD83 / WFS84

Table 2 CSO Discharge on Main Stem of Connecticut River[4]

Town/City	Receiving River	# of CSO Regulators discharging Untreated CSO with no "CSO Level of Control" *	# of other CSO Regulators designed to meet "CSO Level of Control"*	Estimated Annual Volume of *Untreated* CSO Discharge, Million Gallons (MG)/year
Franklin County				
Montague	Connecticut River	0	3 (3 MG/yr of *Treated* CSO	<1 MG
Hampshire County *The last 3 CSO regulators (South Hadley) were eliminated as of December 31, 2007*				
Hampden County				
Ludlow**	Chicopee River	1	0	< 1 MG
Palmer***	Ware River	5	0	< 1 MG
	Quabog River	1	0	< 1 MG
Chicopee	Chicopee River	16	0	116 MG
	Connecticut River	12	1 (150 MG/yr of *Treated* CSO)	111 MG
Springfield	Chicopee River	0	4	< 1 MG
	Mill River	0	7	2-20 MG
	Connecticut River	12	0	423 MG
Holyoke	Connecticut River	12	2 (300 MG/yr of *Treated* CSO)	255 MG
TOTAL		59	17 (Including 453 MG/yr of *Treated* CSO to CT River)	790 MG/yr - CT River 120 MG/yr – Chicopee River

** "CSO Level of Control", for the purposes of this Table, is 4 Untreated CSO Discharge events per year, or less.*

**K. Boisjolie noted that the one remaining CSO in Ludlow was eliminated July 1, 2010.

***The 6 remaining CSO's in Palmer are scheduled to be eliminated in 2011.

[4] Western MA Combined Sewer Overflow (CSO) Regulators, Status as of March 2010, MA DEP – WERO, K. Boisjolie

Task 4 Sample Collection and Source Tracking

Tier 1 sites were sampled on Wednesday mornings between 6 and 9:30 am during wet or dry weather. Samples were delivered to lab at the Holyoke Waste Water Treatment Plant for analysis by 10am. Sampling results were posted to the project website by the following Thursday afternoon at www.umass.edu/tei/mwwp/ctrivermonitoring.html . The sampling day was selected due to the availability of the lab to process samples on Wednesdays. Posting the data by Thursday afternoon then provided end of the week / weekend river recreational users to be informed about recent *E. coli* levels.

Tier 2 sites were sampled during dry weather events only, as defined as <0.1" of rain within 24 hours prior to sampling. PVPC and CRWC tracked precipitation rates to determine dry versus wet weather sampling events. For purposes of distinguishing wet weather sample collections from dry weather events, a value of 0.1" rain in the 24 hours prior to sampling was chosen as the minimum qualifying amount. Rainfall data was obtained from records contained on the weather underground web site (www.wunderground.com). Data from these stations was reviewed for day of sampling (taking care to note start time and duration of rainfall, in order to ascertain that rainfall occurred prior to time of sampling) and the previous day. Wet/dry designations were assigned to each site. In almost all cases, wet/dry conditions for sites within a reach were uniformly wet or dry for a given sample date. Out of nineteen sample events on the main stem of the Connecticut River, three were wet weather and sixteen were dry weather.

Table 3 Weather Stations

Weather Station	Station Code	Sample Site Location
North Thompsonville, Enfield, CT	KCTENFIE5	Longmeadow & Agawam
Easthampton	KMAEASTH2	Holyoke
South Hadley & Surrounded by Trees	KMASOUTH10	South Hadley
Near Szot Park, Chicopee	KMACHICO6	Chicopee
Weather at NMH, Northfield Mount Hermon	KMAMTHER2	Gill

Tier 2 sites were sampled at least three times during the 2010 and spring of 2011 sampling season. If sampling results exceeded single sample E. coli levels on one or more sampling event, source tracking measures were instituted. Source tracking involve: 1) sampling at Tier 3 sites to bracket the source; 2) limited visual stream surveys; and, 3) communications with the local Conservation Commission, Department of Public Works, or other town board/department to gain insight about land uses and probable bacteria sources. Results of all source tracking activities are discussed in detail under the Results Section of this report.

Air and water temperatures were collected at the sites as well as visual observations about the sampling location, i.e. water color, smell, turbidity, trash, wild fowl, etc. These observations were noted on the field data sheets and are included in the Appendices.

Task 5 Lab Analysis

Escherichia coli

All Tier 1 samples were analyzed for E. coli bacteria at the municipal wastewater treatment plant lab in Holyoke (HWWTP), operated by Suez/United Water, utilizing EPA SOP 1603 for membrane filtration. Tier 2 and 3 sites collected by CRWC were analyzed at CRWC's lab in Greenfield utilizing the Colilert system, from Standard Methods 9223B. Tier 2 and 3 sites collected by PVPC were analyzed at the HWWTP during May – September 2011, and at CRWC in October 2011 through June 2012.

Participating labs sent electronic copies of sampling results to WRRC upon completion of sample analyses. WRRC posted water quality data on the project web site within one day of completion of laboratory analyses.

Optical Brighteners

Optical brightener testing is a way of determining whether or not laundry detergents are entering a water body-either through a direct discharge or after traveling through the ground from a septic system that may be functioning poorly. Optical brightener testing can be used as a screening tool to separate areas with elevated bacterial counts due to inputs from human sources (septic systems or cross connections) as opposed to domestic animals, pastured animals or wildlife. Human from animal waste sources can be screened using OB by deploying the test pads in storm drains or small feeder streams.

Besides laundry detergents some other materials may also cause positive results. These include metal particles, bleached materials, cotton dust, or paper products. It is important that the unbleached cotton pads are not exposed to these contaminants via aerial deposition or by physical contact-such as placing the pad down on paper, particularly if either is wet, which allows the optical brighteners to leach out.

Dry weather flows at piped outfalls may be field screened for optical brighteners (OBs). A tentative list is provided in Table 6.1 of the QAPP, but specific sites are to be determined via prior field inspection, and during Tier 3 sampling.

CRWC completed a single round of optical brightener testing along the underground portion of Maple Brook in Greenfield. CRWC River steward worked with one of the CRWC volunteers to identify sites, place the pads in catch basins, and retrieve them after a period of four days. Standard operating procedures (SOPs) as identified in the QAPP were followed. White cotton pads without optical brightener from VWR Inc. were used. Pads were inserted into an 8½ x 12½-inch plastic mesh bag (typically used for vegetables or shellfish) purchased from Volm Companies, Inc. of Wisconsin. Pads were weighed down with small rocks, and the pads were stapled onto the mesh. The staples were determined to be inconvenient during the removal process. A bag with a pad was lowered down a

storm drain using fishing monofilament, and affixed to the metal grate of the catch basin by tying. Prior to going out in the field, all supplies and equipment were tested for optical brightener contamination by shining a black UV light over each item.

Task 6 Outreach and Education / Technology Transfer

In March of 2010, PVPC and CRWC sent letters to the Department of Public Works and Conservation Commissions in each town within the target sampling areas. Letters informed local officials about the start of the project, the type of data to be collected, sites/rivers to be monitored and requested any information they may have about potential illicit connections as well as their stormwater drainage systems. PVPC and CRWC followed up with phone calls and interviews to review local maps and gather pertinent information.

Sampling results were posted to the project website at www.umass.edu/tei/mwwp/ctrivermonitoring.html . As noted above, this website was established under the EPA TWI grant and also included data for the main stem Connecticut River sites from 2008 and 2009. Numerous press releases were issued throughout the project duration to promote awareness of the project website and the availability of the data. Although we do not know the extent to which this data reached recreational river users in the target area, we do know the data was being used by professionals in the region. For example, at an open space and recreation plan visioning session for the Town of Williamsburg on September 28, 2010, a representative of the Mill River Greenway Coalition referenced the *E. coli* data collected for the section of the Mill River in Florence. The representative further informed the audience that there is "lots of *E. coli* data for other rivers in the region including the Connecticut River on the project website".[5] WRRC received calls from Turners Falls High School and Northampton High School about using the data for school projects.

[5] Capra, Anne. Pioneer Valley Planning Commission. Noted while facilitating the Williamsburg Open Space and Recreation Plan Visioning Session.

RESULTS

Quality Control Results

Quality control results can be found in the Appendices. CRWC ran field replicate samples and lab duplicates for each sampling event. Of 13 field replicates, all were <24.9% relative percent difference (RPD) with most < 10%. For two sites, the result was 1 or less and the replicate was 13 or less, resulting in a RPD of 200%. However, given the actual counts were only 1 to 13 colonies, this does not indicate any quality concerns.

All main stem samples were analyzed by the Holyoke Waste Water Treatment plant (HWWTP). A field duplicate and lab blank were run for quality control. Except for the first sample event on 6/2/10, the RPD for the field duplicates were <28%.

As part of the quality control program to ensure results were comparative between the two labs and different methods being utilized for e. coli analysis, split samples were run of 7/19/10 and 10/12/10. In the July QC split, the RPD between the CRWC lab and HWWTP lab remained within an acceptable RPD which did not exceed 19.5% for the three sampling sites (FRH1, FRH7 and FRH9). However, it was noted that results from HWWTP were consistently lower than CRWC's results.

To ensure that results and methodologies were producing consistent results between the two labs, we ran another split on October 12, 2010. This time we also engaged a third lab, the Greenfield Waste Water Treatment Plant (WWTP). Greenfield participated as the analysis lab in 2008 and 2009 for E. coli analysis under the EPA TWI grant. The Greenfield WWTP lab utilizes the same EPA 1603 method that the Holyoke WWTP utilizes, therefore eliminating any inconsistencies that might exist between the Colilert method and the EPA 1603 method. One 500 ml sample was collected in the field at each location. The sample was taken back the Greenfield WWTP, shaken to ensure a well-mixed sample, and poured off into three sample bottles, one for each lab. This method ensured a homogenous sample for each of the labs to analyze.

Results from QC split amongst the three labs indicated a significant under counting at the Holyoke WWTP lab as noted in the results found in Table 4.

Table 4 Split QC Results

10/12/2010	***Blank***	***FRH1***	***FRH2***	***FRH5***	***Method***
CRWC		461.1	2419.6	93.3	Colilert
Holyoke WWTP	0	255	835	84	E. coli Enumeration via m-TEC, EPA 1603
Greenfield WWTP	0	300	2533	73.3	E. coli Enumeration via m-TEC, EPA 1603
7/19/2010		***FRH1***	***FRH7***	***FRH9***	
CRWC		547.5	307.6	119	Colilert
Holyoke WWTP		178	123	172	E. coli Enumeration via m-TEC, EPA 1603

PVPC discussed the results with the Holyoke WWTP lab director and technician to determine how such significant discrepancies in a field duplicate could have occurred. It appears that Holyoke was not adhering to the SOP for EPA 1603 and did not "prep" agar plates to result in counts of 80 cfu or less. Instead they have consistently been counting full 100ml samples. According to the EPA 1603 method, counts over 80 cannot accurately be counted. It was therefore determined that results from the Holyoke lab were likely accurate for lower counts. However, for higher counts, limit undetermined, it is not possible to know exactly how high those counts were. Although this discrepancy does call into question the validity of the data from the WWTP lab, the project partners believe that the data does reflect a trend indicative of whether or not a water quality violation exists at a site. How severe the violation may be at any given sample event cannot be accurately determined based on the lab's violation of standard operating procedure. Due to this occurrence, PVPC will no longer be utilizing the Holyoke WWTP lab and will be sending all samples to the CRWC's lab in Greenfield for the 2011 sampling season.

Weather Data

A major study question was the impact that wet weather has on bacteria levels in the Connecticut River, particularly at the high-use recreational access points selected as sampling sites. For purposes of distinguishing wet weather sample collections from dry weather events, a value of 0.1" rain in the 24 hours prior to sampling was chosen as the minimum qualifying amount. Rainfall data was obtained from records contained on the weather underground web site (www.wunderground.com). Out of nineteen sample events on the main stem of the Connecticut River, three were wet weather and sixteen were dry weather.

E. coli Data Results

Collectively, the data supports the finding that the Connecticut River is adversely affected by polluted runoff during wet weather events in the Southern Massachusetts reaches, preventing the river from supporting contact recreation during wet weather. Table 6 notes the number of times the primary contact level for a single sample was exceeded (>235 colonies /100ml). As identified in Table 6, site MAC1 known as Bassett Marina/North End Bridge consistently violated water quality standards in both dry and wet weather. PVPC began source tracking activities at this location in August 2010.

Table 5 Massachusetts Criteria for E. coli (Escherichia coli; units = colonies/100ml)

Geometric mean[1]	Single sample maximum	Appropriate Recreational Use
≤ 126	235	Suitable for primary and secondary contact (Class B)
> 630	1260	Unsuitable for primary and secondary contact recreation (Class C)

1. Geometric mean of 5 or more samples taken within the same bathing season for bathing beaches, otherwise samples taken within most recent 6 months.

Table 6 Number of times primary contact limit exceeded

SITE	2010	
	WET	DRY
MAH1	1/3	0/16
MAH2	1/3	1/16
MAC1	3/3	7/16
MAC2	1/3	0/16
MAC3	0/3	1/16
MAC4	0/3	1/15
MAH3	0/2	0/16
MAH4	0/2	0/15
MAG4	0/3	0/14

**number of exceedances / number of sampling events (dry or wet)*

Dry Weather

Table 7 E. coli Levels at Tier 1 Sites During 2010 Dry Weather Monitoring Events (colonies/100ml)

Tier 1 Sites Dry Weather	Site Codes	6/2/10	6/9/10	6/16/10	6/30/10	7/7/10	7/14/10	7/21/10	7/28/10	8/4/10	8/11/10	8/18/10	8/25/10	9/1/10	9/8/10	9/15/10	9/22/10
Pioneer Valley Yacht Club, Longmeadow	MAH1	21	65	51	146	27	122	37	38	26	108	18	48	154	21	26	5
Pynchon Point Park, Agawam	MAH2	170	108	107	290	126	85	29	31	111	96	6	170	134	80	46	104
North End Bridge/Bassett Marina Boat Launch, Springfield	MAC1	159	113	136	TNTC	433	190	139	223	90	1206	41	555	275	467	425	100
Davitt Bridge / Granby Rd, Chicopee	MAC2	102	114	89	82	117	150	129	126	106	109	3	77	100	81	57	57
Medina St. Boat Ramp, Chicopee	MAC3	25	86	43	162	51	43	46	35	24	110	18	44	31	348	12	15
Berchulski Fisherman Access, South Hadley	MAC4	63	115	51	91	110	52	58	67	43	121	85	NS	108	300	41	33
Jones Ferry, Holyoke	MAH3	17	42	18	133	25	39	30	22	25	54	51	84	37	50	40	20
Brunelle's Marina, South Hadley	MAH4	84	63	33	58	19	7	12	13	9	NS	12	53	20	4	3	7
Barton Cove, Gill	MAG4	63	65	80	17	98	114	23	12	35	224	2	NS	NS	21	3	9

Wet Weather

Table 8 E. coli Levels at Tier 1 Sites During 2010 Wet Weather Monitoring Events (colonies/100ml)

Tier 1 Sites Wet Weather	Site Codes	6/23/2010	9/29/2010	10/6/2010
Pioneer Valley Yacht Club, Longmeadow	MAH1	242w	126w	28w
Pynchon Point Park, Agawam	MAH2	369w	200w	78w
North End Bridge/Bassett Marina Boat Launch, Springfield	MAC1	TNTCw	TNTCw	TNTCw
Davitt Bridge / Granby Rd, Chicopee	MAC2	145w	121w	450w
Medina St. Boat Ramp, Chicopee	MAC3	140w	115w	107w
Berchulski Fisherman Access, South Hadley	MAC4	131w	86w	144w
Jones Ferry, Holyoke	MAH3	71w	NS	89w
Brunelle's Marina, South Hadley	MAH4	180w	230w	NS
Barton Cove, Gill	MAG4	186w	171w	33w

Bassett Marina/North End Bridge, Springfield (MAC1)

In August 2010, PVPC contacted the Springfield Water and Sewer Commission (SWSC) to discuss the high E. coli results at Bassett Marina. This site is known to be downstream of several CSOs in Holyoke, Chicopee and Springfield. Given this, wet weather water quality violations were expected but not dry weather violations as well. It was suspected that a possible dry weather overflow may be occurring, so the investigation started with closest CSO sources since upstream sites did not exhibit this high level of bacteria contamination. It was also believed that the marina was privately owned and on city sewer.

In September 2010, SWSC conducted deed research to determine the owner of the marina and performed dye testing at the marina boat house to determine if the facility was connected to the municipal sewer system. The dye testing indicated that the site was not connected to the sewer system, however no dye turned up in the river indicating that an on-site septic system existed and was functioning. SWSC also determined per its deed research that this site was owned by the City of Springfield and that Bassett Marina held a long term lease that was due to expire in 2011.

In November 2010, the City of Springfield hired GZA consultants to locate the septic system and perform a full inspection for the facility. The tank was unearthed and found to be full of solid materials with little free water. The leach field is located under the driveway and not vented. In conclusion, GZA determined the septic system was in poor condition, does not meet current State environmental codes, and is in close proximity to the Connecticut River. Due to the proximity to the river and the permitting challenges repair or replacement of the septic system would incur, GZA recommended the City pursue connection to the sewer operated by SWSC long the adjacent West Street. The City of Springfield has adopted GZA's recommendations and has currently initiated design for the construction of a sewer connection for this location. Design was completed in June 2011. The sewer connection is planned for August/September 2011.

Plan for 2011

PVPC will continue to monitor MAC1 during and post sewer connection to determine if the proposed remediation efforts conclusively identify the septic system as the source, and improved water quality is observed.

Tributary Monitoring Sites (Tier 2 and 3)

Barton Cove, Montague and Gill

Barton Cove was selected as a "tributary" site because weekly sampling at the state boat ramp at Barton Cove during 2008 and 2009 under the EPA Targeted Watershed Initiative indicated that the site had intermittently high bacteria levels. Project partners thought it would be useful to try to identify bacteria sources in Barton Cove. Four sites around the cove were selected, as follows:

CTRG1: Franklin County Boat Club, most downstream dock, Gill

CTRG2: First Light dock at Barton Cove campground access road, Gill

CTRG3: Unity Park, furthest upstream location, Montague

CTRG4: Unity Park parking area near former bridge abutment, Montague

CRWC visited each site three times during the 2010 season, results in Table 9.

Table 9 Barton Cove Bacteria Sampling Results 2010

Site ID	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL
CTRG1	7/7/10	<1.0	8/12/10	1	9/1/10	2
CTRG2	7/7/10	1	8/12/10	6.3	9/1/10	2
CTRG3	7/7/10	30.5	8/12/10	67.7	9/1/10	38.4
CTRG4	7/7/10	9.7	8/12/10	10.7	9/1/10	4.1

All samples had surprisingly low bacteria results. No further source tracking activities were deemed necessary. Weekly sampling at the state boat ramp also had very low bacteria results, even during wet weather. We don't know if a bacteria source was eliminated between 2009 and 2010. The only other major thing that we know that was different about 2010 was that Northfield Mountain Pumped Storage Project was off line between May 1 and November 22, 2010. This meant that the Connecticut River above Turners Falls was not fluctuating as widely on a daily basis, but it is unclear how this would have affected bacteria levels in this area.

Update for 2011

The weekly monitoring results for the Barton Cove state boat ramp have had several high readings in 2011, after being consistently low in 2010. CRWC collected one round of samples at Tier 2 sites around the cove as well as at the weekly site (MAG4). All samples had low bacteria counts, except for MAG4 that day. CRWC then sampled at three additional sites on the state boat ramp property on a weekly

sampling day to get a better sense of the on-site bacteria readings. All were high, with some variation. CRWC observed a storm drain structure at one edge of the property, and we will try to find out more information about this unit. If this drainage structure is not a source, it is possible that there is a failed septic system nearby, or that there is something about the configuration of the Cove in that location in which bacteria from geese and other sources tends to congregate there and not elsewhere. This bacteria source remains unidentified at the end of the 604b grant period, but CRWC may do some further work under a different grant later in 2011.

Maple Brook, Greenfield

Maple Brook is a tributary to the Green River in Greenfield. It is a natural stream, but is underground through most of its distance and it also receives the majority of stormwater runoff from the urbanized portion of central Greenfield. Therefore, sewer lines and other utilities cross through it or run along the inside of it underground. Maple Brook daylights close to its confluence with the Green River off Colrain Street just downstream of the former Wedgewood Gardens trailer park, a parcel now owned by the Town of Greenfield and the site of a future car-top access point. Historically, Maple Brook has had consistently high bacteria levels, with some sources being fixed by the town. In 2009, the MassDEP bacteria source tracking team measured high bacteria here. A 1998 bacteria source tracking study also identified Garfield Street as a definite source. This study was performed by J. Skalka at UMass (Masters Project) for the Deerfield Watershed Team.

CRWC wanted to confirm that levels were still high and try to help the town identify any bacteria sources. One site was selected for sampling, as follows:

MBG1: Maple Brook near the confluence with the Green River.

CRWC visited this site three times during the 2010 season. Results are shown below.

Table 10 Maple Brook Bacteria Sampling Results 2010

Site ID	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL
MBG1	7/7/10	>2,419.6	8/12/10	986.7	9/1/10	>24,196

This site had consistently high bacteria levels. As an attempt to better identify bacteria source areas, optical brightener testing was initiated in the underground portion of Maple Brook. CRWC met with a staff person of the Greenfield Department of Public Works who provided CAD maps of good sampling locations along the main stem of Maple Brook. Cotton pads were set out at eight storm catch basins on Thursday, August 26, 2010 and retrieved four days later on Monday, August 30, 2010. Pads were hung to dry and read using a hand-held UV lamp to determine if they fluoresced. Results are summarized in Table 11.

Table 11 Optical brightener results, Maple Brook, August 26-30, 2010

Site ID	Location	OB Result	Notes
MBG-OB-01	53 Conway St., E side of St.	Negative	Rank odor
MBG-OB-02	1 Arch Place in front of Unity in the Pioneer Valley	Negative	
MBG-OB-03	159 Davis St., E side of St.	Negative	
MBG-OB-04	14 &16 Garfield St., S side of St.	Definite positive	Sewer smell and pad soiled with sewage
MBG-OB-05	131 Franklin St., E side of St.	Negative	
MBG-OB-06	Near 19 North St. & Baystate parking lot	Negative	Pad stained reddish
MBG-OB-07	101 Maple St, N side of St.	Mottled positive	
MBG-OB-07dup	101 Maple St, N side of St.	Mottled positive	
MBG-OB-08	W of 37 Beacon St., N side of St.	Negative	

Figure 1. Dried optical brightener pads ready for analysis on September 2, 2010

There was one clear "hit" at Garfield Street and one potential positive at Maple Street. During a meeting with the Greenfield DPW, it was determined that a red-stained pad found on North Street may have been due to a former rouge factory in that area. The DPW thought that all rouge sediments had been removed, and they planned on investigating this further.

Plans for 2011

CRWC met with staff from the Greenfield Department of Public Works (DPW) in February of 2011 and presented the bacteria and optical brightener testing results from Maple Brook. DPW staff felt that dry weather winter testing at catch basins would help identify certain problem areas and would minimize any effect of wildlife bacteria skewing results (less wildlife activity in the winter).

CRWC did extensive testing along Maple Brook during the spring of 2011, with the assistance of Greenfield DPW staff for sample site identification using CAD drawings and opening manholes and storm drain grates. After several rounds of sampling, a bacteria source was identified within a short distance between the CVS parking lot off Federal Street and a manhole near 3 Maple Street. All samples of Maple Brook downstream of Maple Street tested very high. Greenfield DPW did televising and dye testing in that area, and identified a sewer siphon leaking under the Maple Brook culvert. Greenfield is in the process of getting a short section of that sewer lined. Sandy Shields, Greenfield's DPW director, has informed MassDEP's western regional office of this situation. Once that section of sewer is lined, CRWC will do another round of testing (under a different grant) downstream to see if there are other sources in Maple Brook.

Bloody Brook, Deerfield

Bloody Brook is a tributary to the Mill River (Hatfield) and runs through much of South Deerfield. MassDEP collected several samples at the BBD1 site (Whately Road) and got a reading of 960 counts/100mL on September 9, 2009. Other earlier studies had also identified bacteria being a problem along Bloody Brook. Five Tier 2 sites were selected, and four Tier 3 sites were later sampled, as follows:

Tier 2 sites

BBD1: Whately Road, along N-S running segment. Upstream side of the bridge

BBD2: A northern tributary of Bloody Brook at Conway Street, north side of street

BBD3: Routes 5 &10, west side of road

BBD4: Pleasant Street, south side of road

BBD5: Captain Lathrop Drive, south side of street

Tier 3 sites

BBD2.1: Northern tributary of Bloody Brook, upstream side of Route 116 near field

BBD2.2: Northern tributary of Bloody Brook, east side of Routes 5 & 10

BBD3.1: Bloody Brook behind library, upstream of culvert to school

BBD4.1: Bloody Brook, just downstream of Kelleher Drive

CRWC visited each Tier 2 site three times during the season, and tier 3 sites once. Results are in Table 12.

Table 12 Bloody Brook Bacteria Results 2010

Site ID	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL
BBD1	8/4/10	71.7	9/1/10	152.9	9/21/10	67
BBD2	8/4/10	>2,419.6	9/1/10	7,269.9	9/21/10	1,202.3
BBD2.1	10/20/10	139.6				
BBD2.2	10/20/10	235.9				
BBD3	8/4/10	727.0	9/1/10	547.5	9/21/10	206.4
BBD3.1	10/20/10	866.4				
BBD4	8/4/10	579.4	9/1/10	488.4	9/21/10	461.1
BBD4.1	10/20/10	517.2				
BBD5	8/4/10	N.S.	9/1/10	275.9	9/21/10	248.1

Note: N.S. = not sampled

BBD1, a site that the MassDEP bacteria source tracking team had identified as having high readings, was consistently low. We later found out through the Deerfield Health Agent, Richard Calisewski, that two nearby failed septic systems had been repaired in 2008 and 2009, and he attributed the difference to these repairs. BBD2 was consistently high. This is along a northern tributary to Bloody Brook. Tier 3 sampling upstream of this site produced low results. We suspect that there is a failing septic system at the house adjacent to the sampling site. BBD3 and 4 had fairly high readings. One round of tier 3 sampling indicated high readings at these sites, but identified no particular source area. More work in this area will happen in 2011. BBD5 had two readings that were slightly higher than the MA state water quality criteria for E. coli.

2011 Update

CRWC met with the Deerfield Health Agent, Richard Calisewski, in February of 2011 and presented the bacteria results from Bloody Brook. He agreed with our assessment of the failed septic system on Conway Street at BBD2, and said that he could not do anything unless a formal complaint was filed, and even then, his options may be limited. He thought the high bacteria readings at BBD3, BBD3.1, BBD4, and BBD4.1 were likely due to sewer line exfiltration. He said that the municipal sewer line is roughly parallel to Bloody Brook and the sewer line has well known I/I (infiltration and inflow) problems during rain events. He thought, during dry weather like that experienced in 2010, water could go the other way

– water from the sewer pipe may leak out and get into the river. He also thought that there may be manure spread in the vicinity of BBD4.

CRWC collected one additional round of samples at all the Tier 2 sites and several tier 3 sites along Bloody Brook in 2011. One site that consistently tested low in 2010 was now high, BBD1 on Whately Road. Another site that was consistently very high last year was now low, BBD2 on Conway Street. Other sites on the main stem of Bloody Brook were not quite as high as last year. Stream levels this year are higher than last summer because we have had more rain. It is possible that the difference in water levels is contributing to this difference. For example, if infiltration from the nearby sewer line was contributing to bacteria in the stream last year, perhaps the hydrology has created different conditions this year. An east branch of Bloody Book off Hillside Road tested high in 2011 and this site is worthy of some follow up because we had never tested it before.

CRWC met again with the Deerfield Health Agent, and tried to schedule a time to go out with him in the field, but a medical condition prevented him from being able to. CRWC's phone calls to a Deerfield Select board member were not returned.

Sugarloaf Brook, Deerfield and Whately

Sugarloaf Brook is a tributary to the Connecticut River, starting in South Deerfield center and flowing towards Whately. It discharges to the Connecticut River at Herlihy Park in Whately. The MassDEP bacteria source tracking team identified this brook as one that had never been sampled, but might be interesting to look at. CRWC was aware that Chang Farms had been illegally discharging its wastewater into this brook without a NPDES permit, and in 2006 the facility was formally given a permit and required to pipe waste from their bean sprout operation to the Connecticut River. Six Tier 2 sites were selected, and one Tier 3 sites were later sampled, as follows:

Tier 2 sites

SBW1: Herlihy Park in Whately, across from the pitching cage, through the woods, and down the bank.

SBW2: Sugarloaf Street extension, Whately

SBW3: Route 116, Deerfield across road from MassHighway garage

SBW4: Thayer Street, Deerfield, downstream side of road

SBW5: Sugarloaf Street, South Deerfield. INACCESSIBLE; never sampled

SBW6: Graves Street, South Deerfield. DRY during summer; never sampled.

Tier 3 sites

SBW1.1: River Road, Whately. Downstream of culvert on east side of road.

CRWC visited each Tier 2 site (with the exception of SBW5 and 6 as explained above) three times during the season, and the tier 3 site once. Results are shown below.

Table 13 Sugarloaf Brook bacteria results 2010

Site ID	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL
SBW1	8/4/10	209.8	9/1/10	235.9	9/21/10	131.4
SBW1.1	10/20/10	238.2				
SBW2	8/4/10	325.5	9/1/10	290.9	9/21/10	80.9
SBW3	8/4/10	91.0	9/1/10	108.6	9/21/10	104.6
SBW4	8/4/10	461.1	9/1/10	155.3	9/21/10	67

Several readings were a bit higher than the MA state water quality criteria for E. coli (235 cfs/100 mL for a single sample), with the highest reading at 461.1 on 8/4/10 at SBW4 at Thayer Street. One sample along River Road also did not yield high results.

Plans for 2011

CRWC will collect at least one more sample at SBW4 and may follow the stream upstream at this location and collect between one and three additional samples. CRWC will also consult with the Deerfield Health Agent about this site.

Unnamed Stream Near Elwell Island, Northampton

"Unnamed stream near Elwell Island" is a tributary to the Connecticut River in Northampton that is underground for most of its distance and then runs into the Connecticut River near Elwell Island just upstream of the Norwottuck Trail bike path bridge. The stream flows under the industrial park in Northampton. To our knowledge, there is no name for this stream. The MassDEP bacteria source tracking team identified this stream as one that had never been sampled, but might be interesting to look at. CRWC met with the stormwater coordinator for Northampton and learned that there are two branches of this stream that come together just upstream of where it daylights. We decided to sample at the accessible location where it daylights. If we got high bacteria readings, we would call the Northampton DPW to assist with pulling manholes to sample the two branches. One Tier 2 site was sampled three times, as shown below:

Table 14 Unnamed Stream near Elwell Island bacteria results 2010

Site ID	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL
USN1	7/13/10	206.4	8/12/10	21.3	9/15/10	2

Our results varied quite a bit, but were consistently in compliance with Massachusetts Surface Water Quality standards for bacteria. On one occasion, we detected a chemical odor, but our testing for bacteria would not address that issue. We did not do any Tier 3 sampling at this location.

Plans for 2011.

We have no plans to do additional monitoring at this site.

Mill River, Hadley and Amherst

The Mill River watershed is used largely for agricultural purposes in Hadley. The portion of the Mill River in Amherst is within the UMASS campus, drains the Campus Pond, receives treated wastewater discharges from Amherst's Waste Water Treatment Plant, and drains dense residential neighborhoods in Amherst. An abundant population of Canada geese congregate at the Campus pond, potentially contributing to water quality problems. Lake Warner, located close to the Mill River's confluence with the Connecticut River is a listed impaired water body.

The lower Mill River in Hadley at Mill Site Road and North Hadley Road had three dry weather exceedances. Given the multiple potential sources, it is difficult to determine the source at this time.

Table 15 Mill River (Hadley and Amherst) Bacteria Results 2010

Site ID	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL
MRH2	6/25/10	258	7/19/10	238		
MRH5	6/25/10	318	7/19/10	191	8/9/10	42
MRH8			7/19/10	157		
MRH13	6/25/10	34	7/19/10	13	8/9/10	56

2011 Update

PVPC sampled MRH2, MRH 11, MRH12, and MRH13 on June 7, 2011. MRH2 at Mill Site Road was 248 MPN/ 100 ml, consistent with the previous samples results, just over the standard limit for the geomean. MRH11 at Meadow Street west (draining a tributary from coming from the northwest corner of Hadley and Sunderland) was 648 MPN/100ml. Further source tracking activity needs to be conducted up this tributary which appears to be a potential source.

Mill River, Florence section of Northampton

The Mill River is a tributary to the Connecticut River. Its headwaters are in Goshen and it runs through Williamsburg and then Northampton, discharging into the Oxbow of the Connecticut River in Northampton. It has multiple dams along the way, the last one at Smith College, and its lower section used to run through downtown but was re-routed by the U.S. Army Corps of Engineers after major floods in the 1930s. The Massachusetts DEP bacteria source tracking team measured high bacteria counts at the Clement Street crossing in 2008, but had one low result in 2009. DEP had found low counts at Bliss Street and Meadow Street bridges. A stormwater outfall pipe near Meadow Street had very high counts in 2009, and the City of Northampton subsequently found a house with its sewer line incorrectly connected to the storm drain line. This source had since been eliminated, but CRWC was encouraged by the Northampton DPW to sample this location again to see if there were additional sources. Four Tier 2 sites were selected, and five Tier 3 sites were later sampled, as follows:

Tier 2 sites

MRN1: Clement Street bridge crossing, sampled upstream side of bridge on river right.

MRN2: Bliss Street bridge crossing, sampled upstream of bridge on river right.

MRN3: Meadow Street bridge crossing, sampled upstream of bridge on river left

MRN3.1: Stormwater outfall downstream of Meadow Street bridge on river left

Tier 3 sites

MRN2.1: Mill River, river left off Pine St park

MRN2.2: Florence Stream, in trench near Ryan Rd

MRN2.3: Storm drain pipe off Pine St across from Arts & Industry Building loading dock

MRN2.4: Small upstream channel just upstream of dam, river left

MRN2.5: Mill River, outfall on river right just upstream of Pine St bridge

CRWC visited each Tier 2 site three times during the season, and tier 3 sites once. Results are shown below.

Table 16 Mill River Northampton Bacteria Results 2010

Site ID	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL
MRN1	7/13/10	135.4	8/12/10	79.8	9/15/10	60.2
MRN2	7/13/10	488.4	8/12/10	307.6	9/15/10	770.1

MRN2.1	9/15/10	613.3	10/26/10	110		
MRN2.2	10/26/10	3.1				
MRN2.3	10/26/10	>2,419.6				
MRN2.4	10/26/10	2,419.6				
MRN3	7/13/10	74.9	8/12/10	185	9/15/10	187.2
MRN3.1	7/13/10	>2,419.6	8/12/10	Dry, N.S.	10/26/10	5,247.3

Note: N.S. = not sampled

CRWC sent results of the first sampling round to Doug McDonald, stormwater coordinator for the Northampton DPW. Of concern were the high readings at MRN2 (Bliss Street) and the Meadow Street outfall. By the end of July, Northampton Board of Health put up signs at popular swimming spots along the Mill River in Florence alerting people that high bacteria may make these areas unsafe for swimming. The DPW also investigated dry weather flow through the drainage system that outlets to the Mill River at Meadow Street. They performed manhole inspections, drain line video inspections, dye tests, and water quality sampling. By the end of July 2010, the DPW had identified one clear illicit connection at 16 Meadow Street, which was verified by dye testing. The DPW sent the owner a Violation Notice. The City and the owner have since been disagreeing as to who is legally responsible for fixing this problem. As of February 2011, the illicit connection had not been eliminated, but Doug McDonald reported that the City is going fix it in the spring, and worry about the legal responsibility later. The DPW will continue to investigate the northern end of the drainage system if possible and through dye tests if video inspection is not possible.

Tier 3 sampling identified high bacteria in the dammed up portion of the river off Pine Street on one date, but it was low the second time this site was sampled. A high bacteria count was also found at a stormwater outfall off Pine Street and in a wetland area just upstream of the dam on the river left side. We reported the results to Doug McDonald from the Northampton DPW in late October, and he responded saying that they will follow this drain system up the line and try to identify any sources. The outfall we sampled was dry when he checked, however.

<u>2011 Update</u>

In 2010, bacteria readings at a stormwater outfall near the Meadow Street bridge indicated a source and Northampton DPW identified an illicit connection at 16 Meadow Street. In the Spring of 2011, with a little pressure from MassDEP, the property owner came to an agreement with Northampton DPW and the building was disconnected from the storm drainage system and re-connected to the sewer system. Northampton DPW has also located another illegal connection on Sheffield Lane in Florence. Dye testing in June 2011 confirmed the source and Northampton is beginning to negotiate or bring forward enforcement actions to correct the connection.

CRWC sampled the Mill River in Florence twice in 2011 in the vicinity of Pine Street and Bliss Street where there were high readings last year. Results have been consistently low. A stormwater outfall that tested high in 2010 has not been flowing in 2011.

Former Mill River Channel, Northampton

CRWC collected a full round of samples from outfalls draining into the former Mill River channel between Old South Street and the wastewater treatment plant in 2011. The Mill River was re-routed by the U.S. Army Corps of Engineers after the devastating floods of the 1930's, and this section of the Mill River is the remnant section that still receives groundwater flow and some flow from underground tributaries and stormwater from the downtown section of Northampton. This channel discharges into the Connecticut River near where the Oxbow connects to the Connecticut River.

CRWC conducted follow-up sampling with the assistance of Northampton DPW environmental planner, Doug McDonald. CRWC sampling was able to narrow down a bacteria source within a half-block along Wright Ave near Route 5. Subsequent work by the Northampton DPW identified the source as being a building's sewer line running through a stormwater pipe and there being a leak in a joint of the sewer line. The leak is under Wright Ave and is the City's responsibility to fix. Northampton will be working on fixing that leak. Additional sampling along Pleasant Street and King Street point to problems in at least two branches of the King Street system. There are also several follow up areas that we looked into but the manhole was too deep to sample with the pole. Northampton DPW will do some follow up work in this area under their Infiltration and Inflow (I/I) study.

Fort River, Hadley and Amherst

The Fort River was included in our study because of high *E. coli* counts collected by the Massachusetts Department of Environmental Protection (DEP) at Route 47 above the Callahan Well Water Treatment Facility on September 3, 2009 (240 colonies /100 ml) and September 9, 2008 (1,500 colonies /100 ml).

In 2010 high E. coli levels were found in the Fort River, and very high levels in its tributary Hart's Brook along Bay Road in Hadley on October 12th and 26th, 2010. PVPC sampled this same location (site FRH1) three times between June and October, 2010. *E. coli* results during this period remained consistently higher than MA Water Quality Standards for primary contact. On October 12th, PVPC sampled at two upstream locations in an attempt to "bracket" the source of the *E. coli*. As noted in Table 1, results for Harts Brook, just before joining the Fort River had E. coli levels of 2,419.6 MPN/100 ml. *E. coli* counts in excess of 235 MPN/100 ml violate Water Quality Standards in Massachusetts for primary contact (swimming).

Harts Brook has several tributaries that collect water from the Bay Road area, and Chmura Road and the Holyoke Range. To better understand which branch of the tributary streams might be contributing the source, on 10/26/10, PVPC sampled several Tier 3 locations: FRHA, FRHB, FRHC, and FRHD. As noted in the results in Table 17:

- FRHA had the highest counts at >2,419.6 MPN/100ml
- FRHD, located at the outfall to the pond behind Hampshire College's Physical Plant on Bay Road had the lowest levels.

These results suggest that the source of the E. coli is located along Bay Road, east of the Hartsbrook School entrance and west of the Hampshire College Physical Plant. Results from the tributaries draining the Chmura Road subwatershed do not indicate that area to be the source.

Field observations for both sampling events in October noted cows and a well-grazed pasture/paddock abutting Harts Brook along Bay Road. Sampling site FRHD was selected because it was the most upstream location after which no farm animals and pasture were observed. An interview with the Hadley Department of Public Works on October 18th noted that the homes along this road are not serviced by a public sewer system and are on private septic systems.

Table 17 E. coli levels* at sampling locations on Fort River in Hadley and Amherst, MA

Sampling Site**	6/25/10	7/19/10	10/12/10	10/26/10
FRH1 – Fort River at Route 47, Hadley	394	547.5	461.1	no sample
FRH2 – Harts Brook at Moody Bridge Road, Hadley	no sample	no sample	2,419.6	290.9
FRHA – Harts Brook	no sample	no sample	no sample	>2,419.6
FRHB – Harts Brook	no sample	no sample	no sample	57.6
FRHC – Harts Brook	no sample	no sample	no sample	60.7
FRHD – Harts Brook	no sample	no sample	no sample	8.6
FRH5 – Fort River at South Maple Street, Hadley	no sample	no sample	93.3	no sample
FRH7 – Fort River at South East Street, Amherst	249	307.6	no sample	no sample
FRH9 – Fort River at Pelham Road, Amherst	182	172	no sample	no sample

**E. coli as MPN/100 ml*

***Refer to the attached map for sampling site locations*

The PVPC submitted a letter to the Hadley Conservation Commission, Board of Selectmen, Board of Health and DEP-WERO on December 13, 2010 indicating we would like to work with the Town to further identify the source(s) of *E. coli* and develop a plan for addressing potential sources.

Plan for 2011

PVPC is in contact with the MA Department of Agricultural Resources' Agricultural Environmental Enhancement Program and the USDA Natural Resources Conservation Service's EQUIP Program about strategies for outreaching to farmer's to identify appropriate best management practices and potential funding options to implement these practices.

Manhan River, Easthampton

MA DEP noted high *E. coli* levels in the Manahan River at Fort Hill Road (MRE1) on 7/1/08 300 colonies/100ml, and 9/9/09 940 colonies /100ml. Several of the sampling events in 2010 slightly exceeded the single sample water quality standard. Potential sources remain undetermined.

Sampling locations and results are as follows:

Table 18 Manhan River, Easthampton Bacteria Results 2010

Site ID	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL
MRE1	6/25/10	226	7/19/10	139	8/11/10	287
MRE2	6/25/10	262			8/9/10	330
MRE3			7/19/10	3		
MRE6	6/25/10	243	7/19/10	110	8/11/10	386

2011 Update

PVPC sampled MRE1, MRE2 and MRE6 on June 7, 2011. MRE2 at the Lovefield Street bridge was 1,732 MPN/100ml. Adjacent to the sampling location – mid-stream, off the bridge – significant dry weather flow was observed at an outfall on the north bank of the river, adjacent to the sampling location. PVPC contacted the Easthampton DPW about conducting a field assessment and additional monitoring to identify a source. The DPW has begun a preliminary investigation at this site.

Buttery Brook and Stony Brook, South Hadley

Buttery Brook was sampled at two locations on 6/21 and 7/12 and 8/2/10. On 7/12/10 one of the locations was TNTC, however there was also a dead beaver nearby and evidence of recent beaver activity in the area. On 8/2/10 the location was dry and not sampled.

Although the South Hadley DPW has eliminated all known combined sewer outfalls, formerly combined infrastructure still exists in places, and the Town repairs the problems as they are identified. For example, in April 2010, a sewer pipe on Route 116 near the Purple Heart Drive on ramp backed up due to a clog in the separated sewer. The backup traveled down an abandoned service connection from a previously demolished commercial facility, discharged into a culvert along the road which drained into Buttery Brook. The DPW located the abandoned service connection and capped it to eliminate the connection permanently. This situation indicates that formerly combined infrastructure probably does exist, and does not activate unless some sort of problem triggers an investigation that allows it to be identified.

A significant portion of Buttery Brook is underground between Purple Heart Drive and Main Street, where it daylights and discharges to the Connecticut River. The underground brook in the Main Street/ Canal Street area is not well defined. Dye testing was performed by the Town of South Hadley to determine the brook's outfall location on the Connecticut River. This neighborhood, known as the South Hadley Falls, is the oldest neighborhood in town, established by industrial mills and powered by the canal and Connecticut River. It is possible that there are abandoned combined sewer lines that on the "lower side" near the canal. The DPW has also located all outfalls along the canal and noted 2 with dry weather flows. It is possible that the flows are groundwater connections. These outfalls have not been sampled.

Willamansett Brook, Chicopee

Willamansett Brook in Chicopee was sampled by MA DEP on 9/9/08 and found to have extremely high E. coli levels of 20,000 CFU/100ml. This was likely due to a CSO related event however further investigation was deemed warranted given the cities recent efforts to abate CSO overflows.

Table 19 Willamansett Brook, Chicopee Bacteria Results 2010

Site ID	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL
WBH1	6/21/10	165	7/12/10	353	8/2/10	103
WBH3	6/21/10	293	7/12/10	260	8/2/10	138

Plans for 2011

PVPC will continue to monitor these locations and determine if there are any plausible Tier 3 sites for monitoring as well. PVPC will conduct an interview the local DPW to determine if other information is available that may be relevant to source tracking.

Mill River, Springfield

The Mill River in Springfield is a highly urbanized watershed. Some segments of the Mill River do receive CSO discharges. However, the section selected for monitoring recently underwent a CSO abatement project. This segment formerly received the vast percentage of CSO/DWO into the Mill River (55 million gallons/year, activating over 80 times per year. This CSO was abated to discharge four times or less per year. Bacteria analysis in this stream segment during dry weather and wet weather events may help evaluating the effectiveness of the CSO 048 abatement.

Plans for 2011

PVPC will continue to monitor these locations and determine if there are any plausible Tier 3 sites for monitoring as well. PVPC will conduct an interview the local DPW and SWSC to determine if other information is available that may be relevant to source tracking.

Table 20 Mill River, Springfield Bacteria Results 2010

Site ID	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL	Sample date	E. coli MPN/100 mL
MRS2	6/28/10	320	7/28/10	702	10/18/10	115
MRS3	6/28/10	140	7/28/10	1017	10/18/10	15
MRS4	6/28/10	131	7/28/10	24	10/18/10	10

Scantic River, Hampden

MA DEP recorded high E. coli levels at Mill Road (SRH1) on 9/9/08 3600 cfu/100ml. Monitoring at this location is intended to determine if this problem still exists and if so, potential sources. Initial sampling on June 28, 2010 did not indicate any problems.

Table 21 Scantic River, Hampden Bacteria Results 2010

Site ID	Sample date	E. coli MPN/100 mL
SRH1	6/28/10	169
SRH4	6/28/10	200
SRH6	6/28/10	20

Plans for 2011

PVPC will continue to monitor these locations and determine if there are any plausible Tier 3 sites for monitoring as well. PVPC will conduct an interview the local DPW to determine if other information is available that may be relevant to source tracking if high counts are noted in 2011.

CONCLUSIONS / PROJECT SUMMARY

2011 marks the fourth consecutive year of E. coli bacteria monitoring along the main stem of the Connecticut River. Each year, increasing numbers of river users become aware of the data's availability on the project website. Similarly, a growing number of water resources planners, advocates and scientists are also utilizing the project data to inform additional research and policy decisions. On June 30, 2011 PVPC received a call from a Masters in Public Health intern at Baystate Medical Center who was utilizing the project data as part of a public health study being conducted in Springfield. The intern's summer work was to conduct interviews of surface water users throughout Springfield to better understand when and where they use the river, what types of activities they engage in (swimming, boating, fishing), and their level of awareness about water quality issues.

As a continuation of this project, PVPC is expanding distribution of the weekly E. coli results beyond the website posting to a list of organizations serving Environmental Justice populations in Holyoke, Chicopee and Springfield. It is our belief, as supported by Baystate Medical Center's current research initiative, that there is a large population of low-income urban residents having primary contact with the river at times when E. coli bacteria levels are likely to be elevated and thus unsafe for human contact. By mid-July, PVPC anticipates distributing a weekly factsheet inclusive of a color coded map and data results to area health clinics and other social service providers to better inform river users of weekly bacteria levels.

Actual sources of bacteria loading have been identified in three tributaries and one source on the Connecticut River main stem as follows:

- Bassett Marina/North End Bridge on Connecticut River, Springfield – failing septic system
- Fort River, Hadley – probable dairy farm on Bay Road, Hadley
- Mill River, Florence – illicit connection at 16 Meadow Street, Florence
- Maple Brook, Greenfield – leaking municipal sewer siphon under Maple Brook culvert

As noted throughout the report, on-going bacteria source tracking activities are underway on nine of the eleven tributaries monitored:

- Mill River, Springfield
- Manhan River, Easthampton
- Fort River, Hadley
- Mill River, Hadley
- Mill River, Florence
- Sugarloaf Brook, Deerfield and Whately
- Bloody Brook, Deerfield
- Maple Brook, Greenfield
- Barton Cove, Montague and Gill Deerfield

APPENDICES

APPENDIX A Site Maps

APPENDIX B Monitoring Locations

APPENDIX C Connecticut River Main Stem Sites – Directions and Photos

APPENDIX D Water Quality Results Tables – 2010 and 2011 (April – June, 2011)

APPENDIX E QC Data 2010

APPENDIX F Quality Assurance Project Plan

APPENDIX G Field Data Sheets - 2010

APPENDIX A

SITE MAPS


SURFACE WATER MONITORING LOCATIONS
Barton Cove of Connecticut River, Montague and Gill
GREENFIELD
GILL
MAIN ROAD
MOUNTAIN ROAD
GILL-MONTAGUE BRIDGE
AVENUE A
2
MYRTLE STREET
WALNUT STREET
OAK STREET
RIVERVIEW DRIVE
FRENCH KING HIGHWAY
HIGHLAND ROAD
CHAPPELL DRIVE
CTRG1
CTRG4
CTRG3
CTRG2
SECOND STREET
FIRST STREET
THIRD STREET
PROSPECT STREET
SPRING STREET
CENTRAL STREET
PARK STREET
MAPLE STREET
CHESTNUT STREET
BARTON COVE ROAD
UNITY STREET
HIGH STREET
GROVE STREET
HILLSIDE AVENUE
CROCKER AVENUE
CHARRON STREET
AVENUE C
KEITH STREET
MONTAGUE
GILL
CARLISLE AVENUE
DAVIS STREET
TURNERS FALLS ROAD
MILLERS FALLS ROAD
INDUSTRIAL BOULEVARD
COOLIDGE AVENUE
MONTAGUE STREET
N
Sampling Site
Other Sampling Site(s)
Local Road
Interstate
State Route
Federal Route
pvpc
Pioneer Valley Planning Commission
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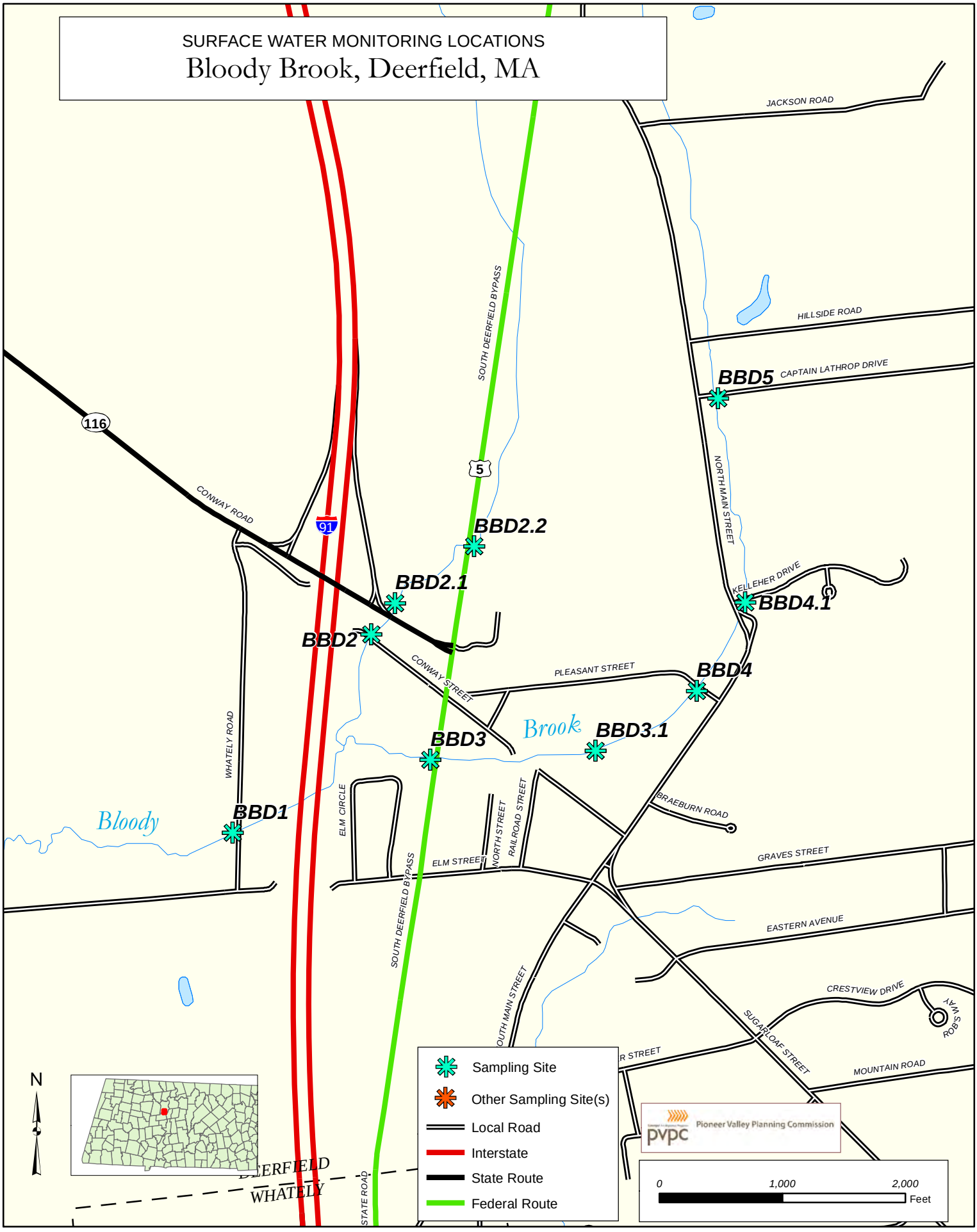
1,000
2,000
Feet


SURFACE WATER MONITORING LOCATIONS
Bloody Brook, Deerfield, MA
JACKSON ROAD
HILLSIDE ROAD
CAPTAIN LATHROP DRIVE
BBD5
SOUTH DEERFIELD BYPASS
NORTH MAIN STREET
116
5
91
CONWAY ROAD
BBD2.2
BBD2.1
BBD2
KELLEHER DRIVE
BBD4.1
CONWAY STREET
PLEASANT STREET
BBD4
Brook
BBD3.1
BBD3
WHATELY ROAD
Bloody
BBD1
ELM CIRCLE
NORTH STREET
RAILROAD STREET
BRAEBURN ROAD
ELM STREET
GRAVES STREET
SOUTH DEERFIELD BYPASS
EASTERN AVENUE
SOUTH MAIN STREET
CRESTVIEW DRIVE
ROBS WAY
SUGARLOAF STREET
MOUNTAIN ROAD
STATE ROAD
DEERFIELD
WHATELY
N
Sampling Site
Other Sampling Site(s)
Local Road
Interstate
State Route
Federal Route
Pioneer Valley Planning Commission
pvpc
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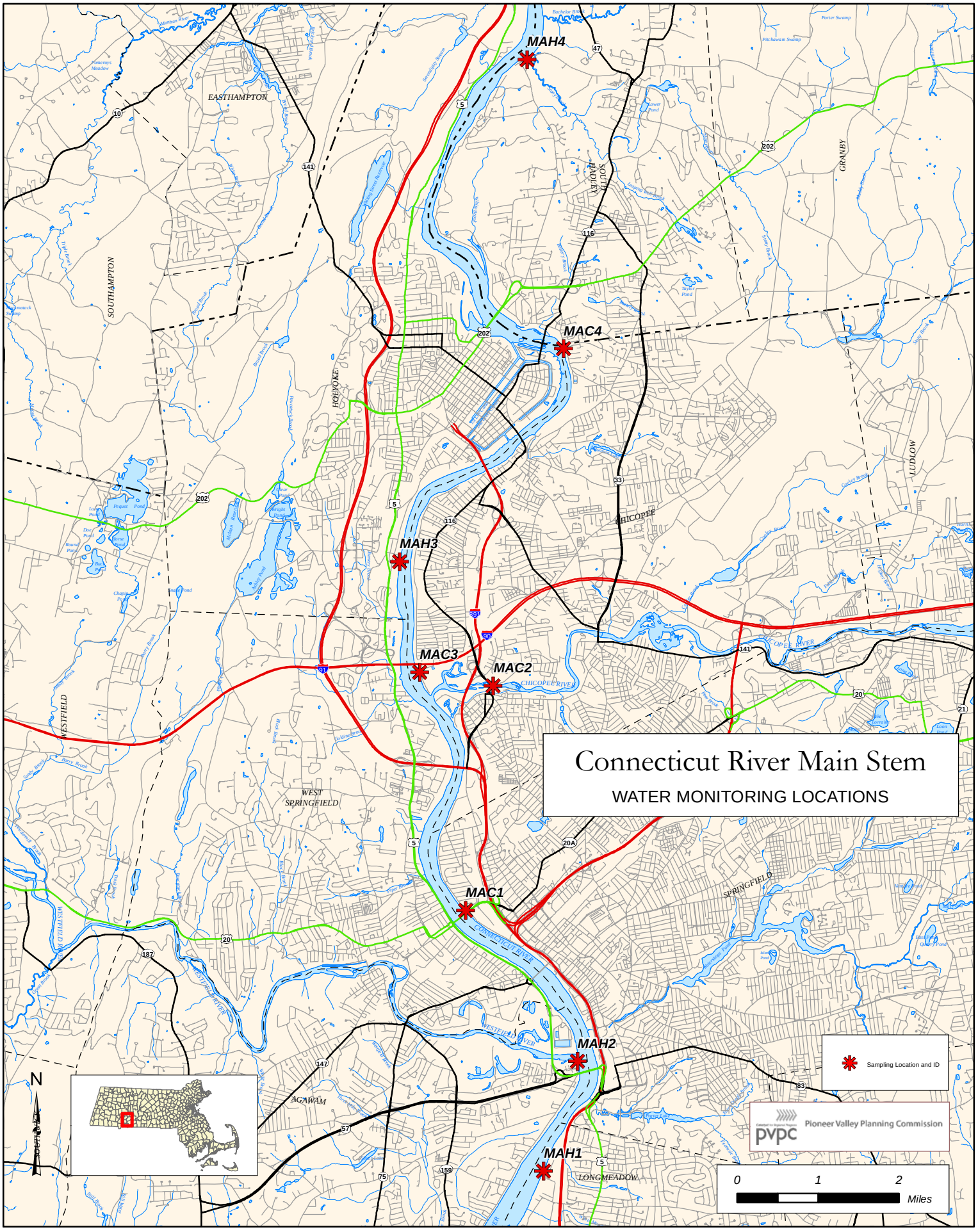
Feet


MAH4
MAC4
MAH3
MAC3
MAC2
MAC1
MAH2
MAH1
EASTHAMPTON
SOUTHAMPTON
HOLYOKE
SOUTH HADLEY
GRANBY
CHICOPEE
LUDLOW
WESTFIELD
WEST SPRINGFIELD
SPRINGFIELD
AGAWAM
LONGMEADOW
CHICOPEE RIVER
CONNECTICUT RIVER
Connecticut River Main Stem
WATER MONITORING LOCATIONS
N
Sampling Location and ID
Pioneer Valley Planning Commission
pvpc
0
1
2
Miles


SURFACE WATER MONITORING LOCATIONS
Fort River, Hadley & Amherst, MA (FR)
MRH1
MRH2
MRH3
MRH4
MRH5
MRH6
MRH8
MRH9
MRH10
FRH1
FRH2
FRH3
FRH4
FRH5
FRH6
FRH7
FRH8
FRH9
FRHA
FRHB
FRHC
FRHD
HADLEY
AMHERST
PELHAM
North Hadley
Mt Warner
Plainville
East Village
Mill Valley
South Amherst
Devils Garden
Bare Mountain
Long Mountain
Holyoke Range
SOUTH HADLEY
GRANBY
Fort River
Mill River
Hop Brook
Plum Brook
Harts Brook
Lawrence Swamp
Baby Carriage Brook
Heatherstone Brook
Adams Brook
Lithia Springs
Lake Warner
NORTH HADLEY ROAD
MOUNT WARNER ROAD
HUNTINGTON ROAD
ROCKY HILL ROAD
RIVER DRIVE
NORTH MAPLE STREET
ROOSEVELT RIDGE STREET
UNIVERSITY DRIVE
STADIUM DRIVE
SUNSET AVENUE
LINCOLN AVENUE
AMITY STREET
MAIN STREET
COLLEGE STREET
NORTHAMPTON ROAD
SNELL STREET
SOUTH PLEASANT STREET
EAST PLEASANT STREET
NORTH EAST STREET
STRONG STREET
CHESTNUT STREET
TRIANGLE STREET
HIGH STREET
GRAY STREET
PELHAM ROAD
HEATHERSTONE ROAD
STANLEY STREET
OLD FARMS ROAD
BELCHERTOWN ROAD
WILDFLOWER DRIVE
WOODDOT ROAD
LARKSPUR DRIVE
IDUNA LANE
STATION ROAD
MILL LANE
EAST HADLEY ROAD
SOUTH EAST STREET
SHAYS STREET
POMEROY LANE
WEST POMEROY LANE
GLENDALE ROAD
POTWINE LANE
MIDDLE STREET
SOUTHEAST STREET
PILGRIMS WAY
MECHANIC STREET
BAY ROAD
WEST BAY ROAD
WEST STREET
MOODY BRIDGE ROAD
SOUTH MAPLE STREET
RUSSELL STREET
SPRUCE HILL ROAD
ZAFIR LANE
EAST STREET
MIDDLE STREET
BAY ROAD
LAWRENCE PLAIN ROAD
CHMURA ROAD
MITCHS DRIVE
HOCKANUM ROAD
East Hadley
47
9
116
N
Pioneer Valley Planning Commission
pvpc
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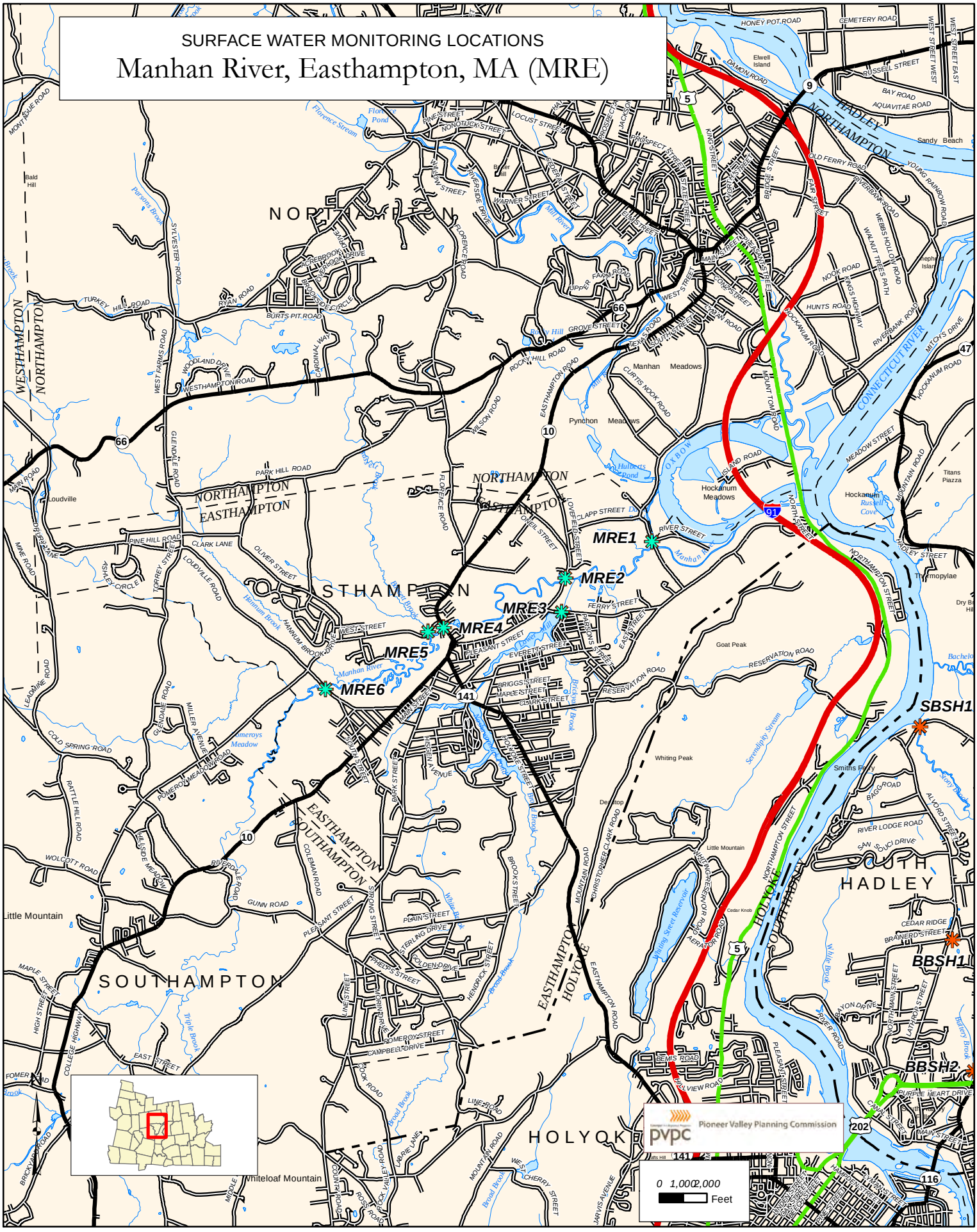
Feet


SURFACE WATER MONITORING LOCATIONS
Manhan River, Easthampton, MA (MRE)
MRE1
MRE2
MRE3
MRE4
MRE5
MRE6
SBSH1
BBSH1
BBSH2
NORTHAMPTON
EASTHAMPTON
SOUTHAMPTON
WESTHAMPTON
HADLEY
HOLYOKE
SOUTH HADLEY
Pioneer Valley Planning Commission
pvpc
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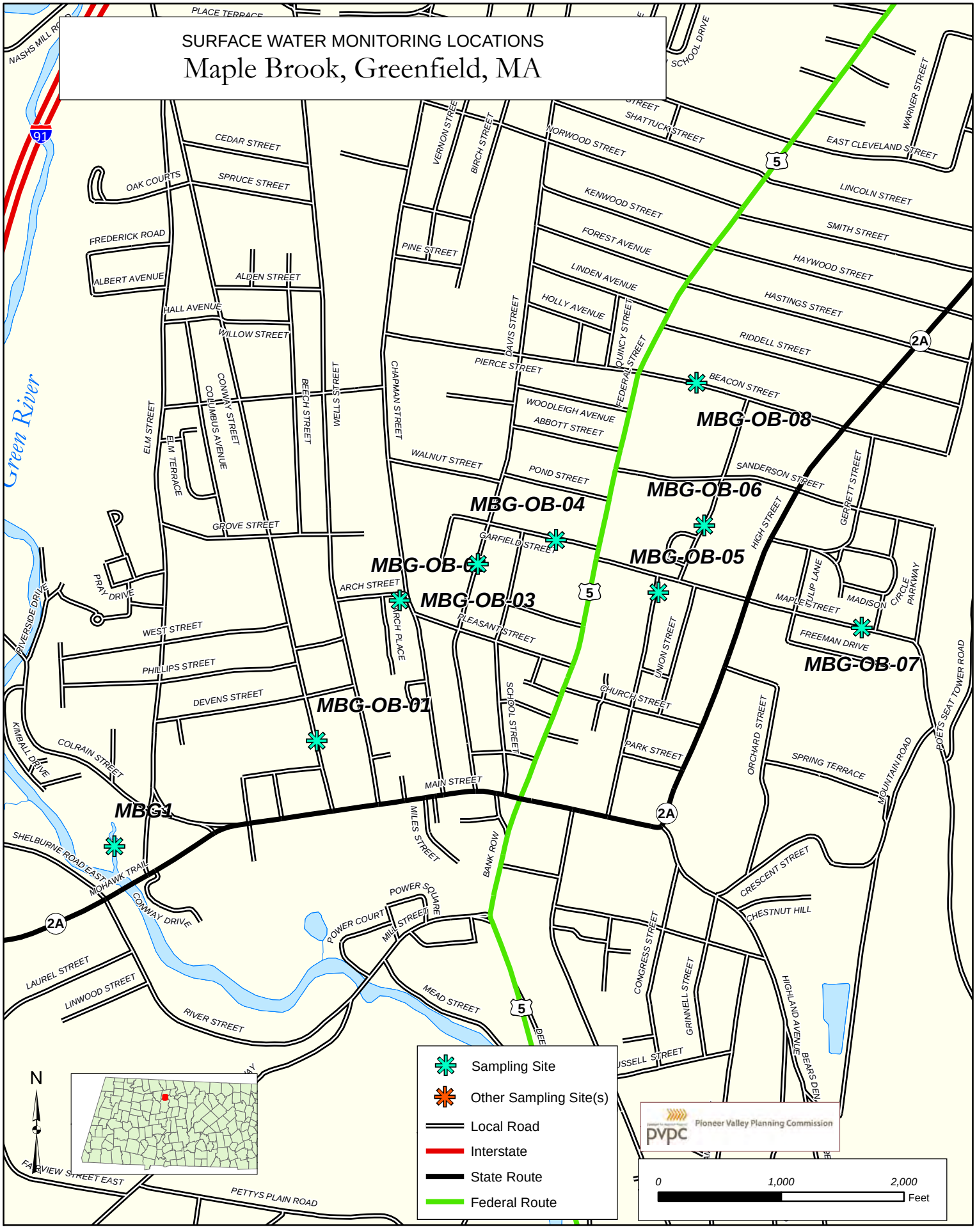
Feet


SURFACE WATER MONITORING LOCATIONS
Maple Brook, Greenfield, MA
MBG1
MBG-OB-01
MBG-OB-02
MBG-OB-03
MBG-OB-04
MBG-OB-05
MBG-OB-06
MBG-OB-07
MBG-OB-08
Green River
91
5
2A
MAIN STREET
MILL STREET
POWER SQUARE
POWER COURT
BANK ROW
MILES STREET
SCHOOL STREET
CHURCH STREET
PARK STREET
ORCHARD STREET
SPRING TERRACE
MOUNTAIN ROAD
POETS SEAT TOWER ROAD
CRESCENT STREET
CHESTNUT HILL
CONGRESS STREET
GRINNELL STREET
HIGHLAND AVENUE
BEARS DEN
MEAD STREET
RIVER STREET
LAUREL STREET
LINWOOD STREET
CONWAY DRIVE
MOHAWK TRAIL
SHELBURNE ROAD EAST
FAIRVIEW STREET EAST
PETTYS PLAIN ROAD
KIMBALL DRIVE
COLRAIN STREET
RIVERSIDE DRIVE
PRAY DRIVE
WEST STREET
PHILLIPS STREET
DEVENS STREET
ARCH STREET
ARCH PLACE
PLEASANT STREET
GARFIELD STREET
GROVE STREET
ELM TERRACE
ELM STREET
CONWAY STREET
COLUMBUS AVENUE
BEECH STREET
WELLS STREET
CHAPMAN STREET
WALNUT STREET
POND STREET
PIERCE STREET
DAVIS STREET
QUINCY STREET
FEDERAL STREET
WOODLEIGH AVENUE
ABBOTT STREET
BEACON STREET
SANDERSON STREET
GERRETT STREET
HIGH STREET
UNION STREET
TULIP LANE
MADISON CIRCLE
PARKWAY
MAPLE STREET
FREEMAN DRIVE
RIDDELL STREET
HASTINGS STREET
HAYWOOD STREET
LINDEN AVENUE
HOLLY AVENUE
FOREST AVENUE
KENWOOD STREET
NORWOOD STREET
SHATTUCK STREET
EAST CLEVELAND STREET
LINCOLN STREET
SMITH STREET
WARNER STREET
SCHOOL DRIVE
VERNON STREET
BIRCH STREET
PINE STREET
CEDAR STREET
SPRUCE STREET
OAK COURTS
FREDERICK ROAD
ALBERT AVENUE
ALDEN STREET
HALL AVENUE
WILLOW STREET
NASHS MILL ROAD
PLACE TERRACE
Sampling Site
Other Sampling Site(s)
Local Road
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State Route
Federal Route
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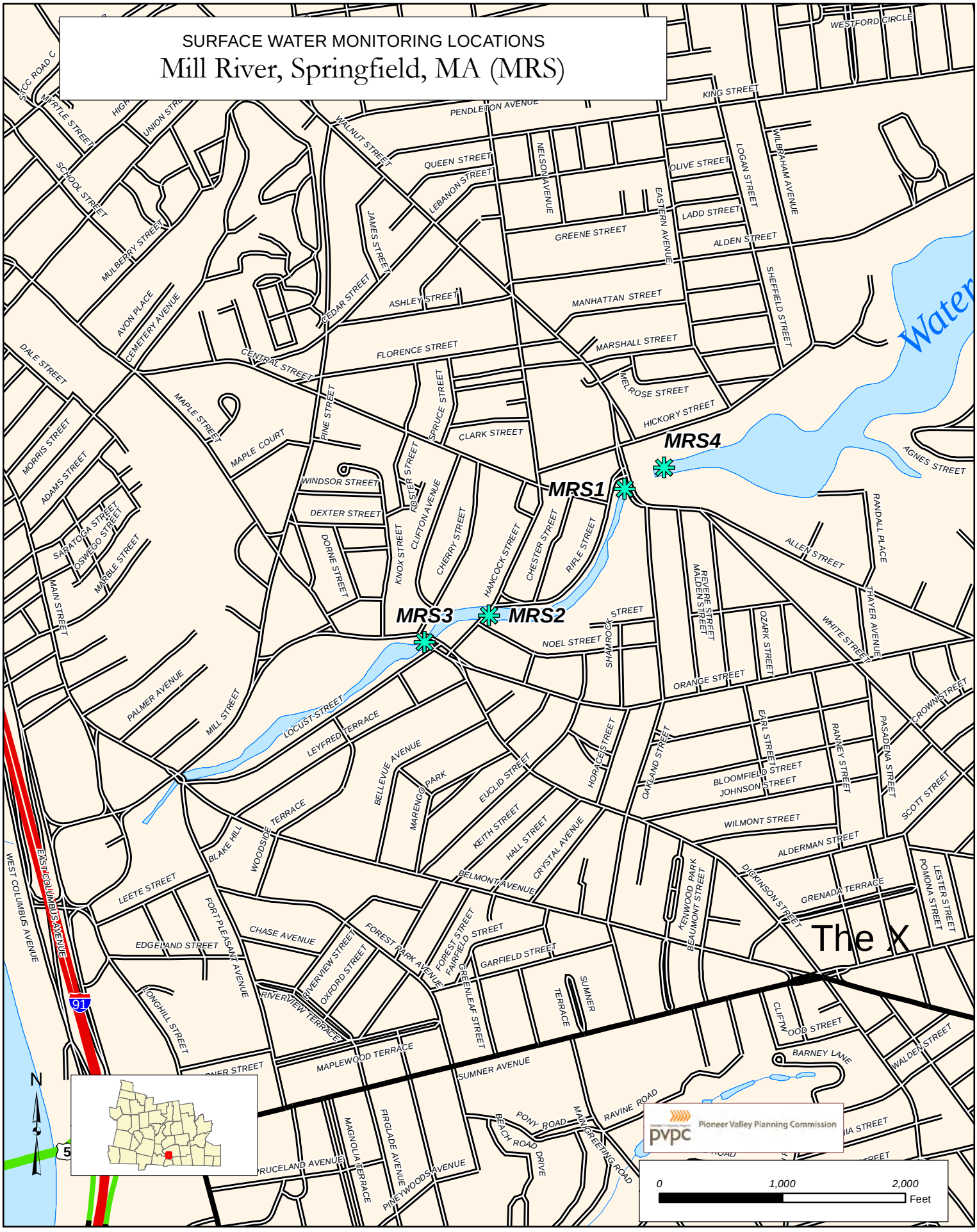
SURFACE WATER MONITORING LOCATIONS
Mill River, Springfield, MA (MRS)
MRS1
MRS2
MRS3
MRS4
The X
WESTFORD CIRCLE
KING STREET
PENDLETON AVENUE
WALNUT STREET
QUEEN STREET
LEBANON STREET
NELSON AVENUE
OLIVE STREET
LOGAN STREET
WILBRAHAM AVENUE
EASTERN AVENUE
LADD STREET
ALDEN STREET
GREENE STREET
SHEFFIELD STREET
MANHATTAN STREET
MARSHALL STREET
MELROSE STREET
HICKORY STREET
AGNES STREET
JAMES STREET
ASHLEY STREET
CEDAR STREET
FLORENCE STREET
CENTRAL STREET
SPRUCE STREET
CLARK STREET
PINE STREET
MAPLE STREET
MAPLE COURT
WINDSOR STREET
FOSTER STREET
CLIFTON AVENUE
CHERRY STREET
HANCOCK STREET
CHESTER STREET
RIFLE STREET
DEXTER STREET
DORNE STREET
KNOX STREET
ALLEN STREET
RANDALL PLACE
REVERE STREET
MALDEN STREET
OZARK STREET
THAYER AVENUE
WHITE STREET
SHAMROCK STREET
NOEL STREET
ORANGE STREET
CROWN STREET
PASADENA STREET
EARL STREET
RANNEY STREET
SCOTT STREET
OAKLAND STREET
HORACE STREET
BLOOMFIELD STREET
JOHNSON STREET
WILMONT STREET
ALDERMAN STREET
GRENADA TERRACE
DICKINSON STREET
LESTER STREET
POMONA STREET
KENWOOD PARK
BEAUMONT STREET
BELMONT AVENUE
CRYSTAL AVENUE
HALL STREET
KEITH STREET
EUCLID STREET
BELLEVUE AVENUE
MARENGO PARK
WOODSIDE TERRACE
BLAKE HILL
LOCUST STREET
LEYFRED TERRACE
MILL STREET
PALMER AVENUE
MAIN STREET
MARBLE STREET
OSWEGO STREET
SARATOGA STREET
ADAMS STREET
MORRIS STREET
DALE STREET
AVON PLACE
CEMETERY AVENUE
MULBERRY STREET
SCHOOL STREET
MYRTLE STREET
UNION STREET
HIGH
SCC ROAD C
WEST COLUMBUS AVENUE
EAST COLUMBUS AVENUE
91
LEETE STREET
EDGELAND STREET
FORT PLEASANT AVENUE
CHASE AVENUE
LONGHILL STREET
RIVERVIEW TERRACE
RIVERVIEW STREET
OXFORD STREET
FOREST PARK AVENUE
FOREST STREET
FAIRFIELD STREET
GREENLEAF STREET
GARFIELD STREET
SUMNER TERRACE
SUMNER AVENUE
MAPLEWOOD TERRACE
CLIFTWOOD STREET
BARNEY LANE
WALDEN STREET
RAVINE ROAD
PONY ROAD
BEACH ROAD
DRIVE
MAIN GREETING ROAD
MAGNOLIA TERRACE
FIRGLADE AVENUE
PINEYWOODS AVENUE
PRUCELAND AVENUE
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Pioneer Valley Planning Commission
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SURFACE WATER MONITORING LOCATIONS
Mill River, Florence section of Northampton
MILL
RIVER
Florence Pond
Florence Stream
Baker Hill
MRN1
MRN2
MRN2.1
MRN2.2
MRN2.3
MRN2.4
MRN2.5
MRN3
MRN3.1
NORTH MAIN STREET
BARDWELL STREET
SHEFFIELD LANE
HILLCREST DRIVE
FOX FARMS ROAD
NORTH MAPLE
STILSON AVENUE
CHESTNUT STREET
GARFIELD STREET
HIGH STREET
LILLY STREET
KEYES STREET
MAIN STREET FLORENCE
STRAW AVENUE
COLONEL LAVALEE LANE
SPRING STREET
MEADOW STREET
PARK STREET
MIDDLE STREET
LOCUST STREET
BERKSHIRE TERRACE
SOUTH MAIN STREET
CORTICELLI STREET
MAPLE STREET
PINE STREET
BEACON STREET
MANN TERRACE
NONOTUCK STREET
NEW STREET
FLORENCE POND ROAD
LANDY AVENUE
CROSS STREET
BLISS STREET
WILLOW STREET
AVIS CIRCLE
CLARK STREET
RYAN ROAD
SPRUCE HILL AVENUE
BIRCH HILL ROAD
PIONEER KNOLLS
ALAMO COURT
GILRAIN TERRACE
FLORENCE ROAD
INDIAN HILL
BROOKWOOD DRIVE
STONE RIDGE DRIVE
RIVERSIDE DRIVE
WARNER STREET
LEXINGTON AVENUE
LIBERTY STREET
BOTTOM ROAD
CLEMENT STREET
Sampling Site
Other Sampling Site(s)
Local Road
Interstate
State Route
Federal Route
Pioneer Valley Planning Commission
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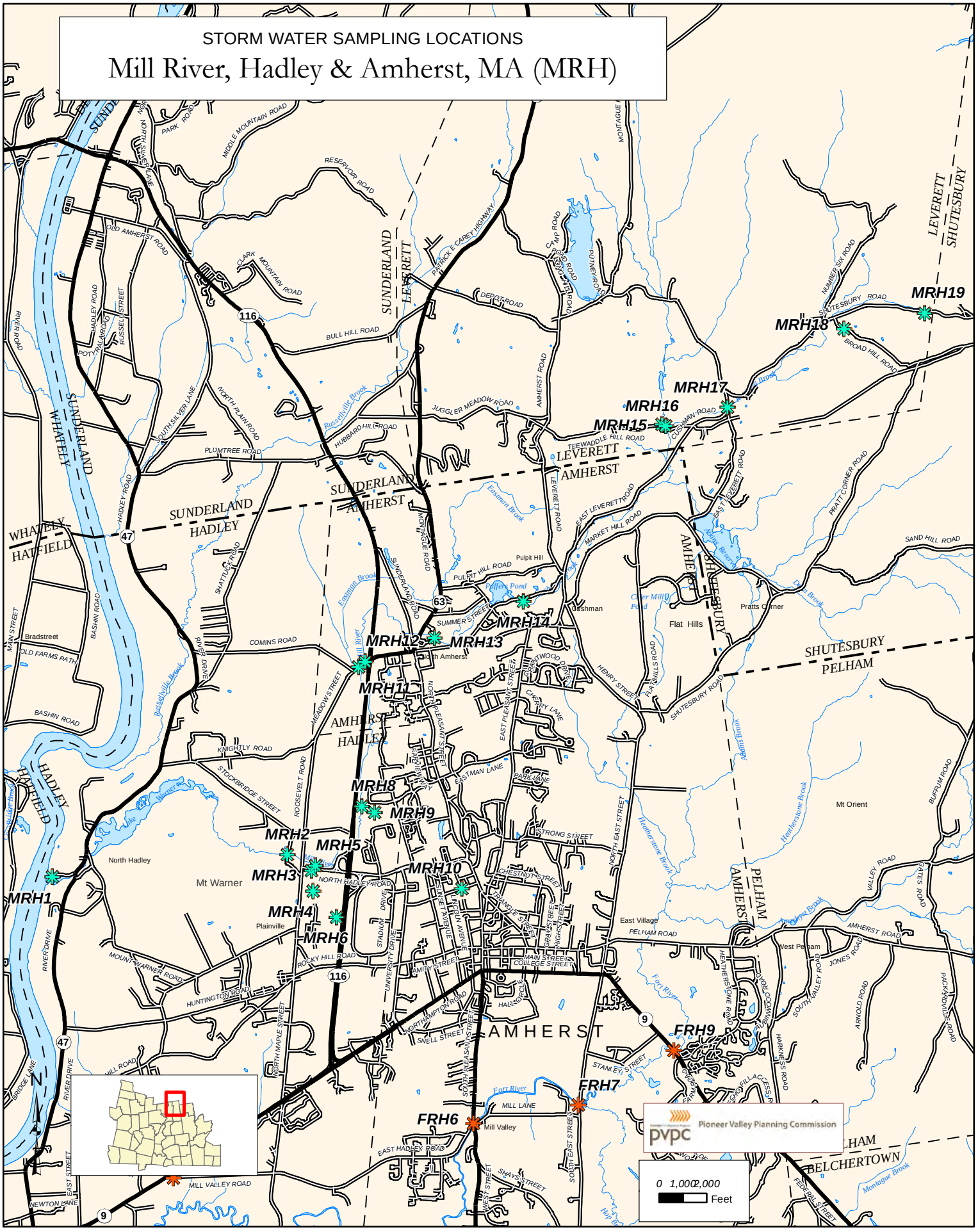
STORM WATER SAMPLING LOCATIONS
Mill River, Hadley & Amherst, MA (MRH)
MRH1
MRH2
MRH3
MRH4
MRH5
MRH6
MRH8
MRH9
MRH10
MRH11
MRH12
MRH13
MRH14
MRH15
MRH16
MRH17
MRH18
MRH19
FRH6
FRH7
FRH9
SUNDERLAND
WHATELY
HADLEY
AMHERST
LEVERETT
SHUTESBURY
PELHAM
BELCHERTOWN
HATFIELD
North Hadley
Mt Warner
Plainville
Mill Valley
Bradstreet
North Amherst
Pulpit Hill
Dashman
Flat Hills
Pratts Corner
Mt Orient
East Village
West Pelham
Pioneer Valley Planning Commission
pvpc
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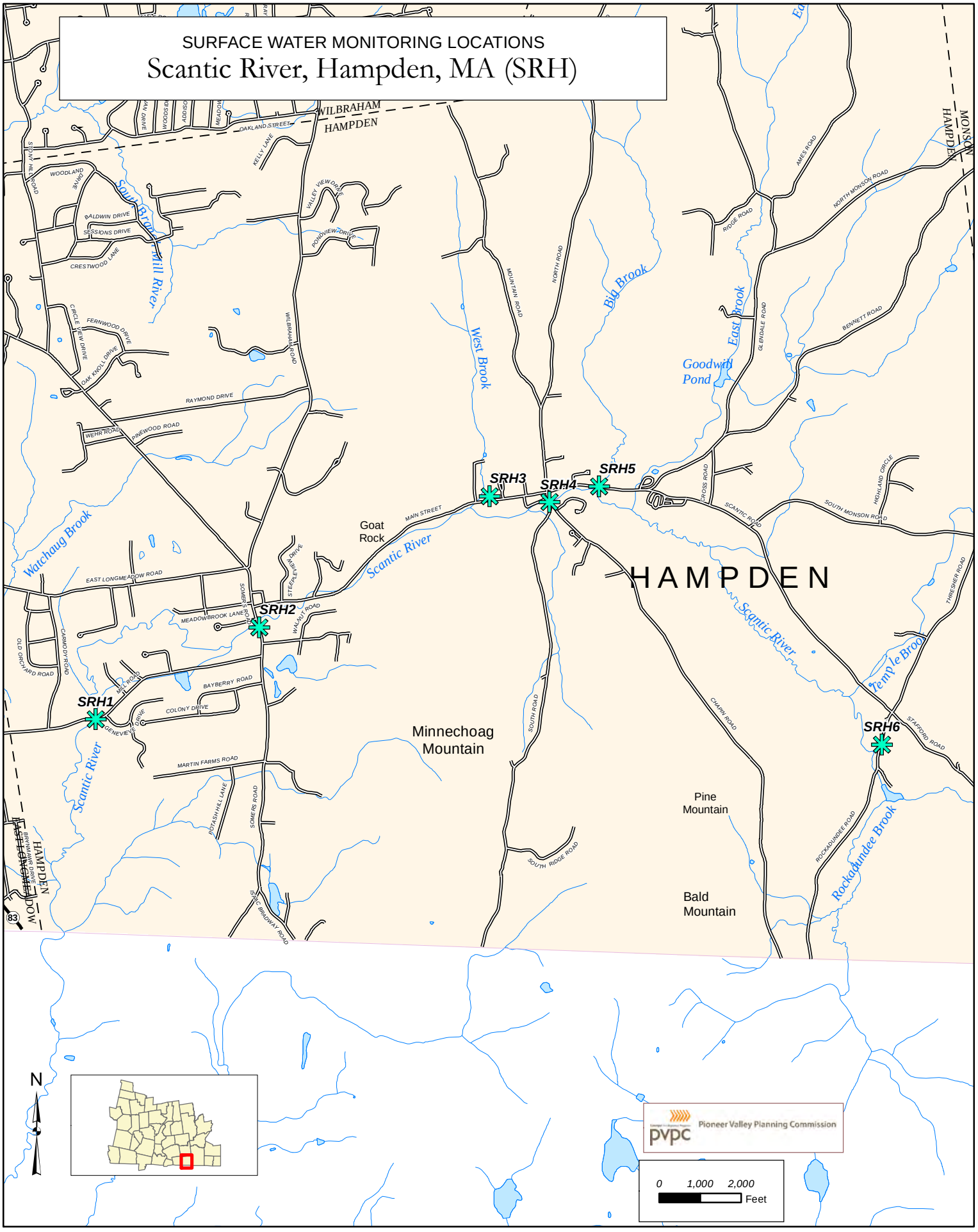
Feet


SURFACE WATER MONITORING LOCATIONS
Scantic River, Hampden, MA (SRH)
WILBRAHAM
HAMPDEN
MONSON
SRH1
SRH2
SRH3
SRH4
SRH5
SRH6
HAMPDEN
Goat Rock
Minnechoag Mountain
Pine Mountain
Bald Mountain
Goodwin Pond
Scantic River
Watchaug Brook
West Brook
Big Brook
East Brook
Temple Brook
Rockadundee Brook
Mill River
MAIN STREET
EAST LONGMEADOW ROAD
MEADOWBROOK LANE
SOMERS ROAD
WALNUT ROAD
BAYBERRY ROAD
COLONY DRIVE
MARTIN FARMS ROAD
POTASH HILL LANE
SOUTH ROAD
SOUTH RIDGE ROAD
CHAPIN ROAD
STAFFORD ROAD
ROCKADUNDEE ROAD
SCANTIC ROAD
SOUTH MONSON ROAD
CROSS ROAD
HIGHLAND CIRCLE
THRESHER ROAD
BENNETT ROAD
GLENDALE ROAD
RIDGE ROAD
AMES ROAD
NORTH MONSON ROAD
MOUNTAIN ROAD
NORTH ROAD
OAKLAND STREET
KELLY LANE
VALLEY VIEW DRIVE
PONDVIEW DRIVE
WOODLAND DRIVE
BALDWIN DRIVE
SESSIONS DRIVE
CRESTWOOD LANE
STONY HILL ROAD
CIRCLE VIEW DRIVE
FERNWOOD DRIVE
OAK KNOLL DRIVE
RAYMOND DRIVE
WEHR ROAD
PINEWOOD ROAD
WILBRAHAM ROAD
OLD ORCHARD ROAD
CARMODY ROAD
MILL ROAD
GENEVIEVE DRIVE
STERLING DRIVE
ISAAC BRADWAY ROAD
BRIARWOOD DRIVE
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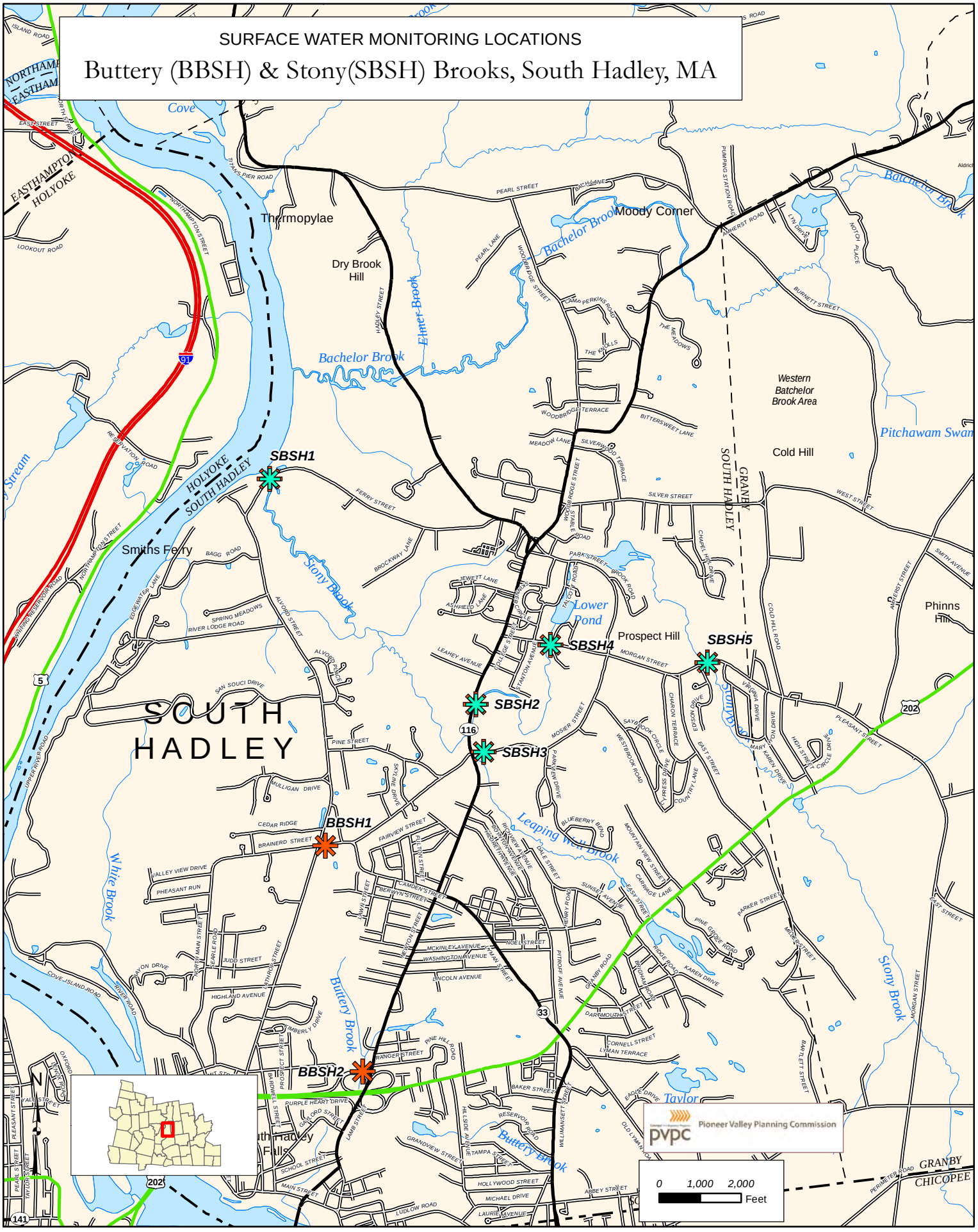
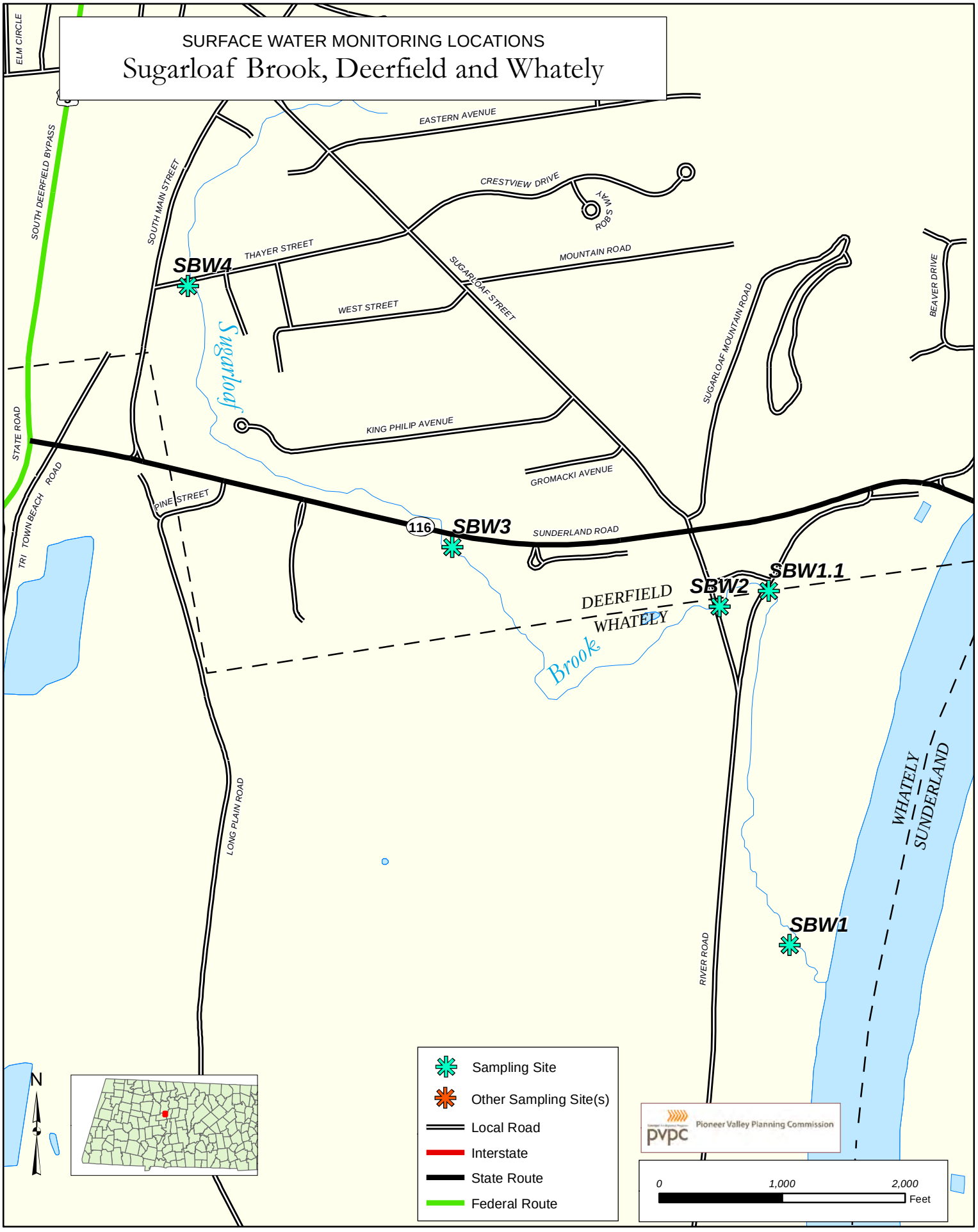
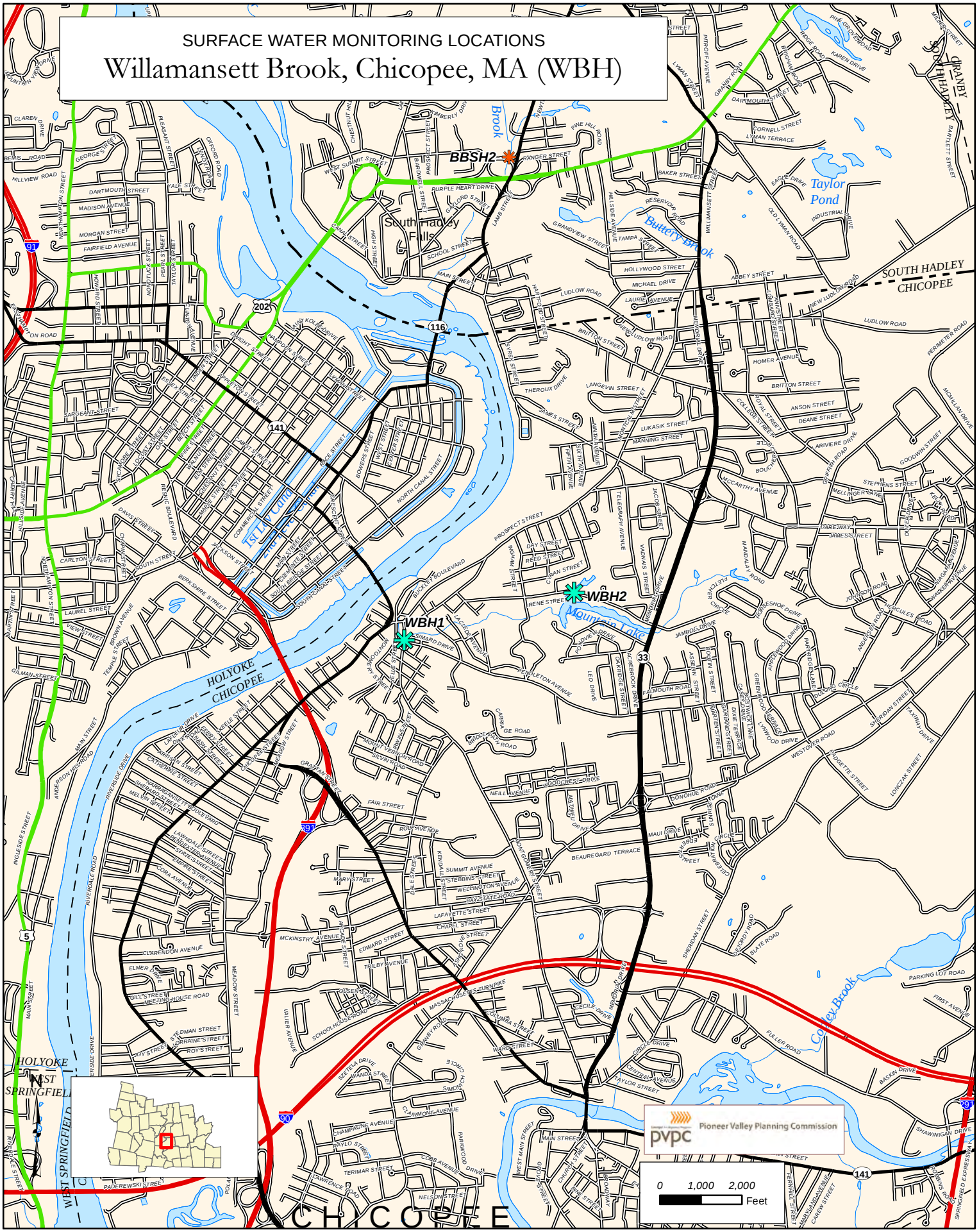
0 1,000 2,000
Feet
pvpc
Pioneer Valley Planning Commission


SURFACE WATER MONITORING LOCATIONS
Buttery (BBSH) & Stony(SBSH) Brooks, South Hadley, MA
SBSH1
SBSH2
SBSH3
SBSH4
SBSH5
BBSH1
BBSH2
Thermopylae
Dry Brook Hill
Moody Corner
Western Batchelor Brook Area
Cold Hill
Prospect Hill
Smiths Ferry
Lower Pond
Taylor
Phinns Hill
SOUTH HADLEY
Bachelor Brook
Elmer Brook
Stony Brook
Buttery Brook
White Brook
Leaping Well Brook
Pitchawam Swamp
Cove
Pioneer Valley Planning Commission
pvpc
0 1,000 2,000 Feet


SURFACE WATER MONITORING LOCATIONS
Sugarloaf Brook, Deerfield and Whately
ELM CIRCLE
SOUTH DEERFIELD BYPASS
SOUTH MAIN STREET
EASTERN AVENUE
CRESTVIEW DRIVE
ROBS WAY
THAYER STREET
MOUNTAIN ROAD
SUGARLOAF STREET
WEST STREET
SUGARLOAF MOUNTAIN ROAD
BEAVER DRIVE
Sugarloaf
KING PHILIP AVENUE
STATE ROAD
TRI TOWN BEACH ROAD
PINE STREET
GROMACKI AVENUE
116
SUNDERLAND ROAD
SBW4
SBW3
SBW2
SBW1.1
SBW1
DEERFIELD
WHATELY
Brook
LONG PLAIN ROAD
RIVER ROAD
WHATELY
SUNDERLAND
N
Sampling Site
Other Sampling Site(s)
Local Road
Interstate
State Route
Federal Route
pvpc
Pioneer Valley Planning Commission
0
1,000
2,000
Feet

SURFACE WATER MONITORING LOCATIONS

Willamansett Brook, Chicopee, MA (WBH)



APPENDIX B

MONITORING LOCATIONS

Site ID	Site Location	Latitude	Longitude
Barton Cove of Connecticut River, Montague and Gill			
CTRG1	Franklin County Boat Club docks, Gill side	42.607871	-72.543497
CTRG 1.1	W edge of Barton Cove boat ramp property	42.607618	-72.542226
CTRG 1.2	Barton Cove boat ramp "beach"	42.607634	-72.541914
CTRG 1.3	E edge of Barton Cove boat ramp property	42.607726	-72.541453
CTRG2	Boat dock at FirstLight Barton Cove campground access road, Gill side	42.604595	-72.532387
CTRG3	Unity Park furthest upstream end, Montague side	42.604394	-72.547414
CTRG4	Unity Park parking area, Montague side	42.606602	-72.549754
Maple Brook, Greenfield			
MBG1	Accessible location near where Maple Brook daylights, off Conway St.	42.586665	-72.612486
MBG-2	S. side Spring Terrace	42.588228	-72.590555
MBG-3	Highland Pond at outlet	42.583834	-72.590560
MBG-A	Colrain Street (where it daylights)	42.587641	-72.612048
MBG-B	53 Conway Street, west side	42.589091	-72.606523
MBG-B.1	One Arch Place, Unity parking	42.592238	-72.603958
MBG-B.2	One Arch Street, S side of road	42.592393	-72.603988
MBG-C	147 School Street, east side	42.592648	-72.600516
MBG-D	17 Garfield Street, south side	42.593662	-72.599215
MBG-D green	17 Garfield St, S side, green PVC pipe	42.593662	-72.599215
MBG-D.1	17 Garfield St, back yard	42.593923	-72.599056
MBG-E	166 Federal St, W side	42.593807	-72.597985
MBG-E mid	166 Federal St, middle of road	42.593773	-72.597913
MBG-F	3 Maple St, S side	42.593119	-72.597508
MBG-G	Entrance to CVS off Maple St	42.592724	-72.597194
MBG-H	Sanderson Street, Kennametal	42.595046	-72.594992
MBG-I	35 & 36 Haywood, south side	42.599726	-72.592044
MBG-I east	36 Haywood, 12" in from east	42.599726	-72.592044
MBG-J	36 Lincoln Street, lawn	42.601262	-72.590390
MBG-K	39 Freeman Drive	42.591163	-72.590259
MBG-L	101 Maple Street	42.591764	-72.589976
MBG-M	16 Walnut Street, north side	42.595137	-72.602167
MBG-OB-01	53 Conway St., E side of road	42.589084	-72.606409
MBG-OB-02	1 Arch Place, in front of Unity in the Pioneer Valley	42.592238	-72.603958
MBG-OB-03	159 Davis St., E side of street	42.593076	-72.601608
MBG-OB-04	14&16 Garfield St., S side of street	42.593635	-72.599252
MBG-OB-05	131 Franklin St., E side of street	42.592492	-72.596138
MBG-OB-06	near 19 North St & Baystate parking lot	42.594002	-72.594778
MBG-OB-07	101 Maple St, N side of street	42.591764	-72.589976
MBG-OB-08	W of 37 Beacon St, N side of street	42.597186	-72.595067
Bloody Brook, Deerfield			
BBD1	Whately Rd. along N-S-running road segment	42.478309	-72.619164
BBD2	North Branch @ upstream side of Conway Street	42.482777	-72.615074
BBD2.1	North Branch, upstream of Rte 116	42.483476	-72.614363
BBD2.2	North Branch, east side of Rtes 5/10	42.484772	-72.612011
BBD3	Routes 5 & 10	42.479994	-72.613238
BBD3.1	Bloody Brook behind library, upstream of culvert to school	42.480243	-72.608265
BBD4	Pleasant St. near North Main St.	42.481610	-72.605237
BBD4.1	Bloody Brook, just downstream of Kelleher Drive	42.483595	-72.603821
BBD4.2	Capt. Lathrop Dr., further downstream walk through back yard	42.488224	-72.604224

Site ID	Site Location	Latitude	Longitude
BBD5	Capt. Lathrop Dr., downstream side	42.488142	-72.604708
BBD6	Hillside Rd., upstream side	42.489541	-72.604952
BBD6.1	Outfall at Hillside Rd., river right	42.489552	-72.605056
BBD7	E branch on Hillside Rd, downstream side	42.489953	-72.599821
BBD7.1	Outfall on E branch of Hillside Rd.	42.489951	-72.599759
Sugarloaf Brook, Whately and Deerfield			
SBW1	Herlihy Park	42.458043	-72.591559
SBW1.1	Sugarloaf Brook, downstream of River Rd culvert	42.465937	-72.592326
SBW2	Sugarloaf St. Ext, Whately	42.465580	-72.593800
SBW3	Route 116, Deerfield	42.466833	-72.601883
SBW4	Thayer St., Deerfield	42.472581	-72.609946
Unnamed Stream near Elwell Island, Northampton			
USN1	Near bike trail bridge off Norwottuck parking lot	42.335550	-72.621478
Mill River, Florence section of Northampton			
MRN1	Clement Street bridge crossing	42.319206	-72.665119
MRN2	Bliss St. bridge crossing	42.329099	-72.675323
MRN2.1	Mill River, off Pine St park	42.330228	-72.678499
MRN2.2	Florence Stream, in trench near Ryan Rd	42.329952	-72.679473
MRN2.3	Storm drain pipe off Pine St across from A&I bldg loading dock	42.330532	-72.677603
MRN2.4	Small upstream channel just upstream of dam, river left	42.330449	-72.677510
MRN2.5	Mill River, outfall on river right just upstream of Pine St bridge	42.330728	-72.678998
MRN3	Meadow St. bridge crossing	42.334242	-72.677328
MRN3.1	Meadow St. pipe outfall	42.334021	-72.677274
Former Mill River channel, Northampton			
FMN1	Former Mill channel, off parking closest to bike path	42.316764	-72.630459
FMN2	Former Mill, where "mainstem" daylights off parking	42.316654	-72.630429
FMN3	Former Mill, east end of parking off Hampton	42.316915	-72.629341
FMN4	Former Mill, east end of parking off Hampton, near housing	42.316806	-72.628734
FMN4.1	King St & Merrick Lane	42.320058	-72.630311
FMN4.2.1	10 Allen Place	42.321180	-72.632195
FMN4.3	King St & Trumbull Rd	42.322069	-72.632096
FMN5	Former Mill, Northampton, off Webbs Parking	42.315004	-72.627143
FMN7	Former Mill, Northhampton, main channel upstream of culvert underground	42.315048	-72.626258
FMN8	Former Mill, main channel, downstream of culvert underground	42.314574	-72.624779
FMN9	Former Mill, storm outfall off Rte 5	42.314504	-72.624811
FMN9.1	Route 5 manhole near Wright Ave, west branch	42.313857	-72.624849
FMN9.2	Wright Ave, midway	42.313290	-72.625416
FMN9.3	W end of Wright Ave, downstream end of flow	42.312905	-72.625773
FMN10	Former Mill, outfall off Hockanum Rd	42.314547	-72.624149
FMN11	Former Mill, upstream end of WWTP, river right	42.313648	-72.623172
FMN12	Former Mill, upstream end of WWTP, river left	42.313598	-72.623047
FMN13	Former Mill, outfall off dirt driveway off Hockanum Rd	42.312347	-72.622060
MBN1	underground Market Street Brook, Pleasant St & Florida Ave	42.316920	-72.626242
Fort River, Hadley and Amherst			
FRH1	Route 47 bridge, Hadley	42.332672	-72.578636
FRH2	Tributary at Moody Bridge Road crossing, west	42.332894	-72.570777
FRHA	Harts Brook		

Site ID	Site Location	Latitude	Longitude
FRHB	Harts Brook		
FRHC	Harts Brook		
FRHD	Harts Brook		
FRH3	Tributary at Moody Bridge Road crossing, east	42.339813	-72.556641
FRH4	Tributary crossing at Mill Valley Road	42.348866	-72.567433
FRH5	South Maple Street, Hadley	42.341327	-72.550244
FRH6	West Street (Rte 116) crossing, Amherst	42.35558	-72.520913
FRH7	Bike Path Bridge/Mill Lane and South East Street, Amherst	42.357819	-72.504658
FRH8	Hop Brook at Station Road Crossing, Amherst	42.341972	-72.493527
FRH9	Pelham Road, Amherst	42.364227	-72.489891
Mill River, Hadley and Amherst			
MRH1	Mouth	42.383385	-72.586842
MRH2	Mill Site Road	42.386286	-72.550385
MRH3	N. Hadley Road Horse Farm	42.384511	-72.546587
MRH4	N. Maple St. Hadley Road Horse Farm - alternate	42.382133	-72.546319
MRH5	N. Hadley Road Main stem Mill River	42.385065	-72.545965
MRH6	Rt. 116 Horse Farm upstream	42.379137	-72.542574
MRH8	UMass parking lot Mill River	42.391999	-72.538835
MRH9	UMass parking lot, Campus Pond outlet	42.39127	-72.536899
MRH10	Fearing St, Mill R. Amherst Center branch	42.382634	-72.523174
MRH11	Meadow St, Mill R. “northwest”	42.408027	,-72.539656
MRH12	Meadow St, Mill R. east	42.408684	-72.538605
MRH13	Mill R. Recreation area. Mill River	42.411504	-72.527887
MRH14	State St, Cushman Brook	42.415833	-72.514095
MRH15	Teewaddle Hill, Cushman Bk. trib	42.43642	-72.492862
MRH16	Teewaddle Hill, Cushman Brook	42.43623	-72.492342
MRH17	Cushman Road, Cushman Brook	42.438483	-72.482724
MRH18	Broad Hill Road Shutesbury . Cushman brook	42.447698	-72.464753
MRH19	Leverett Road Shutesbury. Cushman Brook	42.449579	-72.452205
Manhan River, Easthampton			
MRE1	Fort Hill Road, Easthampton	42.284091	-72.64088
MRE2	O’neill Street/Lovefield Street crossing	42.279761	-72.654266
MRE3	Lower Mill Pond outfall at Ferry Street crossing	42.275797	-72.654725
MRE4	Route 10 crossing and Mill Street	42.273838	-72.673013
MRE5	Bassett’s Brook at West Street	42.273344	-72.675411
MRE6	Glendale Road crossing	42.266552	-72.691225
Stony Brook, South Hadley			
SBSH1	Ferry Street at Brunelle’s Marina, before CT River	42.263138	-72.598919
SBSH2	Rte 116 by Chapdelaine Furniture	42.248222	-72.580097
SBSH3	Leaping Well Brook at Mosier Street	42.245022	-72.579327
SBSH4	At Morgan Street, south of Lower Pond	42.252252	-72.57343

Site ID	Site Location	Latitude	Longitude
SBSH5	Morgan Street, east of Edison Drive and west of Mary Lyon Drive	42.251216	-72.559294
Buttery Brook, South Hadley			
BBSH1	Brainerd Street and Lathrop Street	42.238627	-72.593477
BBSH2	Newton Street at Rte 202 interchange	42.223536	-72.589877
Willamansett Brook, Chicopee			
WBH1	Upstream side of Yelle Street	42.191149	-72.598733
WBH2	Route 33 and east end Robert's Pond	42.19448	-72.583547
Scantic River, Hampden			
SRH1	Mill Road	42.048477	-72.453744
SRH2	Somers Road crossing, north of intersection with Mill Road	42.054766	-72.439141
SRH3	West Brook at Main Street, next to Colonial Village	42.063713	-72.418577
SRH4	At Chapin Road and South Road intersection	42.063363	-72.413208
SRH5	Big Brook at Main Street	42.06443	-72.408744
SRH6	At Rock-A-Dundee Road	42.047369	-72.383108
Mill River, Springfield			
MRS1	Allen Street and Rifle Street, south of Watershops Pond Dam	42.097019	-72.563788
MRS2	Hancock Street and Rifle Street (middle site)	42.094152	-72.567808
MRS3	Mill Street Bridge (downstream site)		
MRS4	Above Watershops Pond Dam (upstream site)		
CT River - Main Stem			
MAG4	Barton Cove Ramp, Gill (same as CTRG1.2)	42.607634	-72.541914
MAH1	Pioneer Valley Yacht Club, Agawam	42.063513	-72.59329
MAH2	Pychon Point Park, Springfield	42.0833	-72.585449
MAC1	North End Bridge/Bassett Marina Boat Launch, Springfield	42.110083	-72.612883
MAC2	Davitt Bridge / Granby Rd, Chicopee	42.1504	-72.606917
MAC3	Medina St. Boat Ramp, Chicopee	42.152702	-72.624522
MAH3	Jones Ferry, Holyoke	42.172379	-72.629898
MAC4	Berchulski Fisherman Access, South Hadley	42.194533	-72.59985
MAH4	Brunelle's Marina, South Hadley	42.194533	-72.599633

APPENDIX C

Connecticut River Main Stem Sites –

Directions and Photos

CT RIVER MONITORING

SITE LOCATION SHEET

Site Name: Pioneer Valley Yacht Club

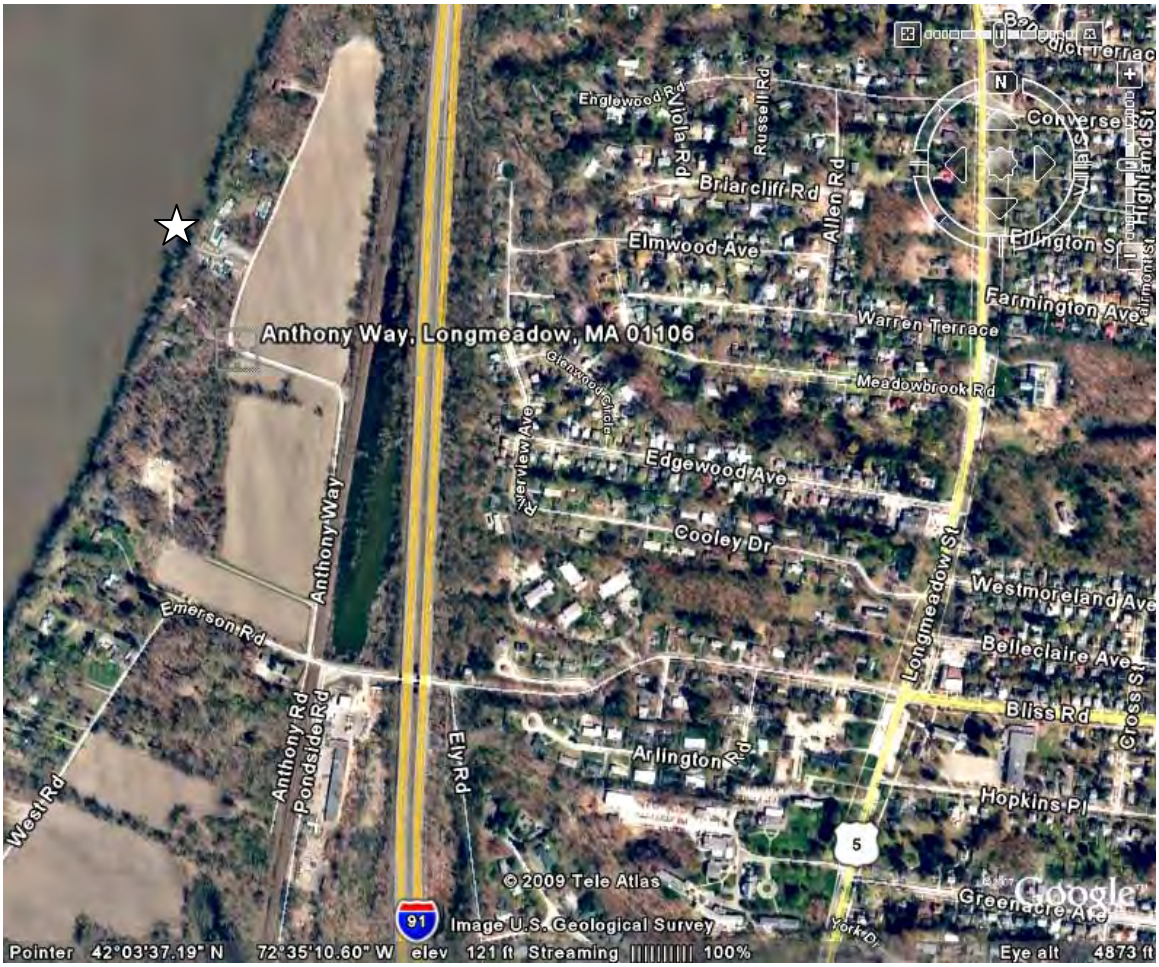
Site Number: MAH1

Street Address/Town: 200 Anthony Way, Longmeadow

Nearest major highway: Route 5/Longmeadow Street

Road names and/or numbers connecting major highway to the site access road: Emerson Road

Specific directions from access road (named above) to exact location of sampling site: Take Emerson Road to west toward river. Just after passing under I-91 overpass and crossing RR tracks, take immediate right onto Anthony Way. Follow Anthony Way for about .5 mile. Yacht Club will be on your left. Take sample off dock to south of boat ramp.



CT RIVER MONITORING

SITE LOCATION SHEET

Site Name: Pynchon Point Park

Site Number: MAH2

Street Address/Town: Agawam

Nearest major highway: Routes 5 and 57 at Agawam Rotary

Road names and/or numbers connecting major highway to the site access road: South End Bridge Circle located off Agawam Rotary just past Kitchens by Herzenberg

Specific directions from access road (named above) to exact location of sampling site: Take South End Bridge Circle for a short distance. Just past pedestrian crosswalk, take left into Pynchon Point parking lot. Park in lot and walk down paved walkway to river. Take sample at end of walkway.

CT RIVER MONITORING

SITE LOCATION SHEET

Site Name: North End Bridge/Bassett Boat Co. Launch

Site Number: MAC1

Street Address/Town: Springfield

Nearest major highway: I-91

Road names and/or numbers connecting major highway to the site access road: Route 20 west

Specific directions from access road (named above) to exact location of sampling site: From Route 20 headed west, pass Avocado Street and Pride Gas Station on left. At light just before bridge over Connecticut River, take left into Bassett Boat Co. driveway. Turn right into parking lot. Take sample from end of boat ramp. If gate to ramp is closed, go inside boat company and request that gate be opened for sampling.

CT RIVER MONITORING

SITE LOCATION SHEET

Site Name: Davitt Bridge/Granby Road

Site Number: MAC2

Street Address/Town: Chicopee

Nearest major highway: Route 391

Road names and/or numbers connecting major highway to the site access road: Route 116

Specific directions from access road (named above) to exact location of sampling site: From Route 116 at northern end of Davitt Bridge, follow Granby Road east for .1 mile. Turn into first driveway on right where you see small wooden kiosk. Park car here. Walk on sidewalk along Granby Road in a westerly direction. Just before you reach second phone pole, turn left to get trail that will take you to river's edge. Follow trail, taking two rights and take steep descent down to small beach area. Take sample from right end of beach.

CT RIVER MONITORING

SITE LOCATION SHEET

Site Name: Medina Street Boat Ramp

Site Number: MAC3

Street Address/Town: Chicopee

Nearest major highway: Route 391

Road names and/or numbers connecting major highway to the site access road: Route 116

Specific directions from access road (named above) to exact location of sampling site: From Route 116, Take Wilson Avenue to end. Turn left on Old Field Road and bend right onto Paderewski Street. Take first left onto Granger Street and turn right just before gates to Waste Water Treatment Plant onto Medina Street. Follow Medina Street to end and park. Take sample from right side of boat ramp.

CT RIVER MONITORING

SITE LOCATION SHEET

Site Name: Jones Ferry River Access Center Boat Launch

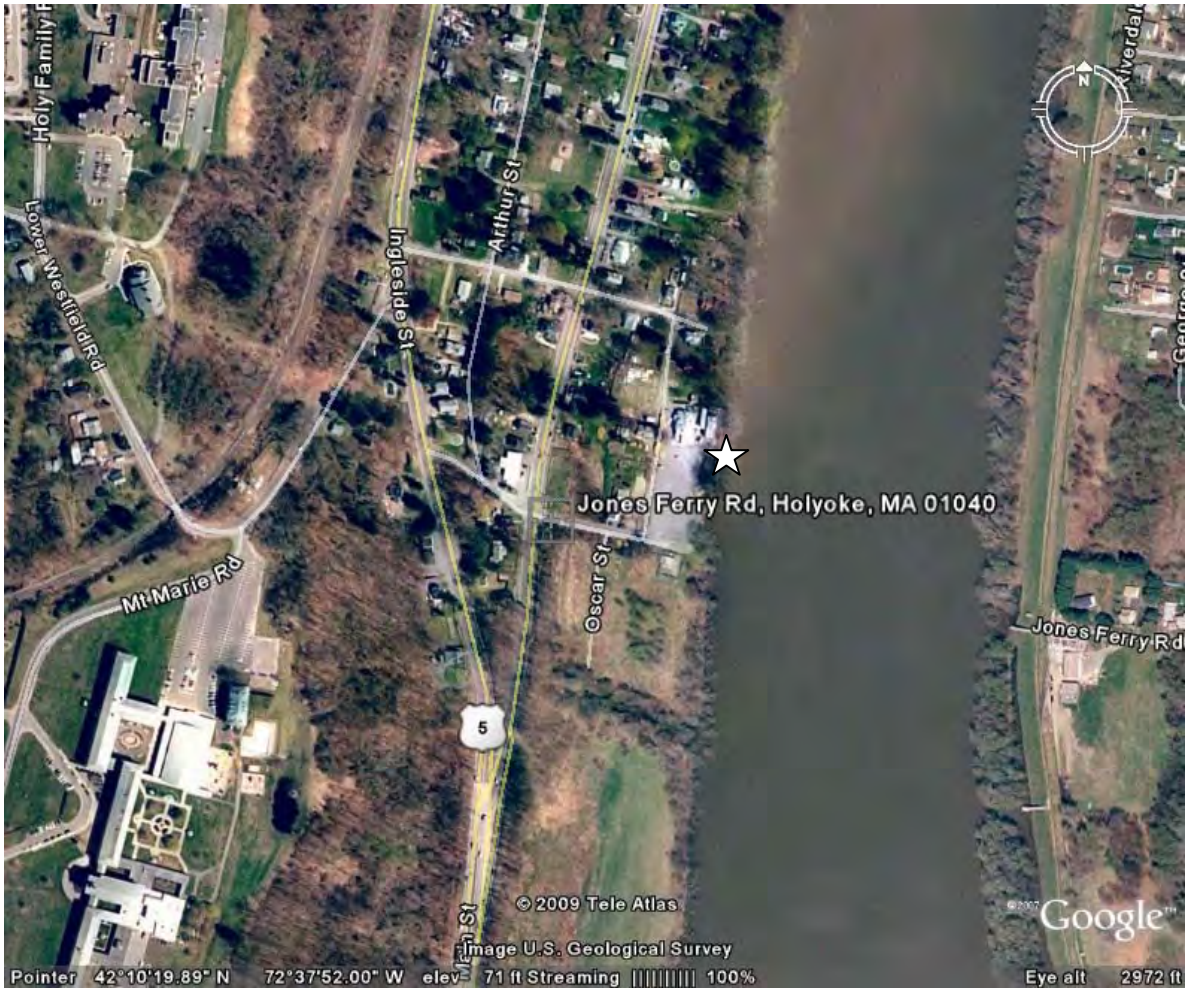
Site Number: MAH3

Street Address/Town: Holyoke

Nearest major highway: Route 5/Ingleside Street

Road names and/or numbers connecting major highway to the site access road: Jones Ferry Road

Specific directions from access road (named above) to exact location of sampling site: Take Jones Ferry Road down hill, across Main Street. Continue toward river, passing Nuestras Raices Farm on your right. Take left into parking lot. Proceed toward boat ramp and park on the right. Take sample at base of boat ramp.



CT RIVER MONITORING

SITE LOCATION SHEET

Site Name: Berchulski Fisherman Access

Site Number: MAC4

Street Address/Town: Chicopee

Nearest major highway: Route 116

Road names and/or numbers connecting major highway to the site access road: Main Street in the Falls Section of South Hadley (turns into Syrek Street as head south into Chicopee)

Specific directions from access road (named above) to exact location of sampling site: From Route 116 in the Falls Section of South Hadley, take South Main Street south for **.**2 miles, passing Beachgrounds Park on your right and Smith Street on your left. Look on right for driveway into Fisherman Access site. Follow driveway down to beach and park car. Sample from end of concrete boat launch. Use caution on exiting driveway.

CT RIVER MONITORING

SITE LOCATION SHEET

Site Name: Brunelles Marina

Site Number: MAH4

Street Address/Town: 1 Alvord Street, South Hadley

Nearest major highway: Route 47

Road names and/or numbers connecting major highway to the site access road: Ferry Street

Specific directions from access road (named above) to exact location of sampling site: Turn onto Ferry Street and proceed west. As it bends left along river, Ferry Street turns into Alvord Street. Brunelles Marina is on right. Enter parking lot and take left. Proceed to far end and park on right. Take sample from end of most southerly dock.

CT RIVER MONITORING

SITE LOCATION SHEET

Site Name: Barton Cove

Site Number: MAG4

Street Address/Town: Gill

Nearest major highway: Route 2

Road names and/or numbers connecting major highway to the site access road: Meadow Street, Oak Street

Specific directions from access road (named above) to exact location of sampling site: From Route 2 Eastbound, take a right onto Meadow Street. Then take left onto Oak Street. Follow Oak Street to end where terminates in parking area for boat club. Walk east from parking lot and take sample from end of boat launch.

APPENDIX D

Water Quality Table Results

2010 and 2011 (April – June 2011)

'SQM	'Activity Category	'Activity Start Date	'Activity Start Time	'Sample Collection Procedure ID	'Characteristic Name	'Result Value	'Result Value Units
MAC1	Routine Sample	6/2/10	9:00 AM	1603	Escherichia coli	159	#/100ml
MAC2	Routine Sample	6/2/10	9:38 AM	1603	Escherichia coli	102	#/100ml
MAC3	Routine Sample	6/2/10	10:00 AM	1603	Escherichia coli	25	#/100ml
MAC4	Routine Sample	6/2/10	8:00 AM	1603	Escherichia coli	63	#/100ml
MAG4	Routine Sample	6/2/10	6:15 AM	1603	Escherichia coli	63	#/100ml
MAH1	Routine Sample	6/2/10		1603	Escherichia coli	21	#/100ml
MAH2	Routine Sample	6/2/10	7:10 AM	1603	Escherichia coli	170	#/100ml
MAH3	Routine Sample	6/2/10	7:15 AM	1603	Escherichia coli	17	#/100ml
MAH4	Routine Sample	6/2/10	8:15 AM	1603	Escherichia coli	84	#/100ml
MQC	Field Duplicate	6/2/10		1603	Escherichia coli	5	#/100ml
HQC	Field Duplicate	6/9/10	7:35 AM	1603	Escherichia coli	98	#/100ml
MAC1	Routine Sample	6/9/10	9:00 AM	1603	Escherichia coli	113	#/100ml
MAC2	Routine Sample	6/9/10	9:37 AM	1603	Escherichia coli	114	#/100ml
MAC3	Routine Sample	6/9/10	9:57 AM	1603	Escherichia coli	86	#/100ml
MAC4	Routine Sample	6/9/10	7:00 AM	1603	Escherichia coli	115	#/100ml
MAG4	Routine Sample	6/9/10	6:08 AM	1603	Escherichia coli	65	#/100ml
MAH1	Routine Sample	6/9/10	8:55 AM	1603	Escherichia coli	65	#/100ml
MAH2	Routine Sample	6/9/10	7:35 AM	1603	Escherichia coli	108	#/100ml
MAH3	Routine Sample	6/9/10	7:25 AM	1603	Escherichia coli	42	#/100ml
MAH4	Routine Sample	6/9/10	8:30 AM	1603	Escherichia coli	63	#/100ml
BLK	Lab Blank	6/16/10		1,603	Escherichia coli	0	#/100ml
HQC	Field Duplicate	6/16/10	9:20 AM	1,603	Escherichia coli	141	#/100ml
MAC1	Routine Sample	6/16/10	9:20 AM	1,603	Escherichia coli	136	#/100ml
MAC2	Routine Sample	6/16/10	9:42 AM	1,603	Escherichia coli	89	#/100ml
MAC3	Routine Sample	6/16/10	10:02 AM	1,603	Escherichia coli	43	#/100ml
MAC4	Routine Sample	6/16/10	7:45 AM	1,603	Escherichia coli	51	#/100ml
MAG4	Routine Sample	6/16/10	6:15 AM	1,603	Escherichia coli	80	#/100ml
MAH1	Routine Sample	6/16/10	8:15 AM	1,603	Escherichia coli	51	#/100ml
MAH2	Routine Sample	6/16/10	*8:15 AM*	1,603	Escherichia coli	107	#/100ml

MAH3	Routine Sample	6/16/10	9:20 AM	1,603	Escherichia coli	18	#/100ml
MAH4	Routine Sample	6/16/10	8:20 AM	1,603	Escherichia coli	33	#/100ml
BBSH1	Routine Sample	6/21/10	9:20 AM	1,603	Escherichia coli	178	#/100ml
BBSH4	Routine Sample	6/21/10	9:50 AM	1,603	Escherichia coli	217	#/100ml
BLK	Lab Blank	6/21/10		1,603	Escherichia coli	0	#/100ml
HQC	Field Duplicate	6/21/10	9:00 AM	1,603	Escherichia coli	40	#/100ml
SBSH2	Routine Sample	6/21/10	8:11 AM	1,603	Escherichia coli		#/100ml
SBSH4	Routine Sample	6/21/10	8:39 AM	1,603	Escherichia coli	32	#/100ml
SBSH5	Routine Sample	6/21/10	9:00 AM	1,603	Escherichia coli	284	#/100ml
WBH1	Routine Sample	6/21/10	10:06 AM	1,603	Escherichia coli	165	#/100ml
WBH3	Routine Sample	6/21/10	10:20 AM	1,603	Escherichia coli	293	#/100ml
BLK	Lab Blank	6/23/2010		1603	Escherichia coli	0	#/100ml
HQC	Field Duplicate	6/23/2010	9:44:00	1603	Escherichia coli	220	#/100ml
MAC1	Routine Sample	6/23/2010	10:30:00	1603	Escherichia coli	TNTC	#/100ml
MAC2	Routine Sample	6/23/2010	9:44:00	1603	Escherichia coli	145	#/100ml
MAC3	Routine Sample	6/23/2010	10:04:00	1603	Escherichia coli	140	#/100ml
MAC4	Routine Sample	6/23/2010	8:00:00	1603	Escherichia coli	131	#/100ml
MAG4	Routine Sample	6/23/2010	6:15:00	1603	Escherichia coli	186	#/100ml
MAH1	Routine Sample	6/23/2010	8:40:00	1603	Escherichia coli	242	#/100ml
MAH2	Routine Sample	6/23/2010	8:15:00	1603	Escherichia coli	369	#/100ml
MAH3	Routine Sample	6/23/2010	10:00:00	1603	Escherichia coli	71	#/100ml
MAH4	Routine Sample	6/23/2010	8:10:00	1603	Escherichia coli	180	#/100ml
BLK	Lab Blank	6/25/2010		1603	Escherichia coli	0	#/100ml
HQC	Field Duplicate	6/25/2010	8:40:00	1603	Escherichia coli	288	#/100ml
FRH1	Routine Sample	6/25/2010	8:40:00	1603	Escherichia coli	394	#/100ml
FRH7	Routine Sample	6/25/2010	8:20:00	1603	Escherichia coli	249	#/100ml
FRH9	Routine Sample	6/25/2010	8:05:00	1603	Escherichia coli	182	#/100ml
MRE1	Routine Sample	6/25/2010	9:25:00	1603	Escherichia coli	226	#/100ml
MRE2	Routine Sample	6/25/2010	9:15:00	1603	Escherichia coli	262	#/100ml
MRE6	Routine Sample	6/25/2010	9:45:00	1603	Escherichia coli	243	#/100ml
MRH2	Routine Sample	6/25/2010	6:59:00	1603	Escherichia coli	258	#/100ml
MRH5	Routine Sample	6/25/2010	7:17:00	1603	Escherichia coli	318	#/100ml

MRH13	Routine Sample	6/25/2010	7:48:00	1603	Escherichia coli	34	#/100ml
BLK	Lab Blank	6/28/10		1,603	Escherichia coli	0	#/100ml
HQC	Field Duplicate	6/28/10	9:45 AM	1,603	Escherichia coli	382	#/100ml
MSR2	Routine Sample	6/28/10	9:55 AM	1,603	Escherichia coli	320	#/100ml
MSR3	Routine Sample	6/28/10	9:45 AM	1,603	Escherichia coli	140	#/100ml
MSR4	Routine Sample	6/28/10	10:05 AM	1,603	Escherichia coli	131	#/100ml
SRH1	Routine Sample	6/28/10	7:45 AM	1,603	Escherichia coli	169	#/100ml
SRH4	Routine Sample	6/28/10	8:20 AM	1,603	Escherichia coli	200	#/100ml
SRH6	Routine Sample	6/28/10	8:40 AM	1,603	Escherichia coli	20	#/100ml
BLK	Lab Blank	6/30/10		1,603	Escherichia coli	0	#/100ml
HQC	Field Duplicate	6/30/10	9:45 AM	1,603	Escherichia coli	202	#/100ml
MAC1	Routine Sample	6/30/10	10:00 AM	1,603	Escherichia coli	TNTC	#/100ml
MAC2	Routine Sample	6/30/10	9:31 AM	1,603	Escherichia coli	82	#/100ml
MAC3	Routine Sample	6/30/10	9:54 AM	1,603	Escherichia coli	162	#/100ml
MAC4	Routine Sample	6/30/10	8:30 AM	1,603	Escherichia coli	133	#/100ml
MAG4	Routine Sample	6/30/10	6:15 AM	1,603	Escherichia coli	17	#/100ml
MAH1	Routine Sample	6/30/10	8:15 AM	1,603	Escherichia coli	146	#/100ml
MAH2	Routine Sample	6/30/10	7:59 AM	1,603	Escherichia coli	290	#/100ml
MAH3	Routine Sample	6/30/10	7:20 AM	1,603	Escherichia coli	91	#/100ml
MAH4	Routine Sample	6/30/10	8:10 AM	1,603	Escherichia coli	58	#/100ml
BLK	Lab Blank	7/7/10		1,603	Escherichia coli	0	#/100ml
CFB1	Field Blank	7/7/10	11:27 AM	1,603	Escherichia coli	< 1.0	#/100ml
CQC1	Field Duplicate	7/7/10	10:02 AM	1,603	Escherichia coli	13.2	#/100ml
CTRG1	Routine Sample	7/7/10	10:02 AM	1,603	Escherichia coli	< 1.0	#/100ml
CTRG2	Routine Sample	7/7/10	10:25 AM	1,603	Escherichia coli	1	#/100ml
CTRG3	Routine Sample	7/7/10	10:55 AM	1,603	Escherichia coli	30.5	#/100ml
CTRG4	Routine Sample	7/7/10	11:17 AM	1,603	Escherichia coli	9.7	#/100ml
HQC	Field Duplicate	7/7/10	7:25 AM	1,603	Escherichia coli	41	#/100ml
LB1	Lab Blank	7/7/10	1:50 PM	1,603	Escherichia coli	< 1.0	#/100ml
LD1	Lab Duplicate	7/7/10	1:40 PM	1,603	Escherichia coli	1	#/100ml
MAC1	Routine Sample	7/7/10	*9:00 AM*	1,603	Escherichia coli	433	#/100ml
MAC2	Routine Sample	7/7/10	9:35 AM	1,603	Escherichia coli	117	#/100ml
MAC3	Routine Sample	7/7/10	9:53 AM	1,603	Escherichia coli	51	#/100ml

MAC4	Routine Sample	7/7/10	8:00 AM	1,603	Escherichia coli	110	#/100ml
MAG4	Routine Sample	7/7/10	7:15 AM	1,603	Escherichia coli	98	#/100ml
MAH1	Routine Sample	7/7/10	8:55 AM	1,603	Escherichia coli	27	#/100ml
MAH2	Routine Sample	7/7/10	7:45 AM	1,603	Escherichia coli	126	#/100ml
MAH3	Routine Sample	7/7/10	7:25 AM	1,603	Escherichia coli	25	#/100ml
MAH4	Routine Sample	7/7/10	8:50 AM	1,603	Escherichia coli	19	#/100ml
MBG1	Routine Sample	7/7/10	9:10 AM	1,603	Escherichia coli	> 2419.6	#/100ml
BBSH1	Routine Sample	7/12/10	8:15 AM	1,603	Escherichia coli	TNTC	#/100ml
BBSH4	Routine Sample	7/12/10	8:30 AM	1,603	Escherichia coli	111	#/100ml
BLK	Lab Blank	7/12/10		1,603	Escherichia coli	0	#/100ml
HQC	Field Duplicate	7/12/10	7:45 AM	1,603	Escherichia coli	97	#/100ml
SBSH2	Routine Sample	7/12/10	7:30 AM	1,603	Escherichia coli	332	#/100ml
SBSH4	Routine Sample	7/12/10	7:45 AM	1,603	Escherichia coli	519	#/100ml
SBSH5	Routine Sample	7/12/10	8:00 AM	1,603	Escherichia coli	332	#/100ml
WBH1	Routine Sample	7/12/10	9:00 AM	1,603	Escherichia coli	353	#/100ml
WBH3	Routine Sample	7/12/10	9:10 AM	1,603	Escherichia coli	260	#/100ml
CQC1	Field Duplicate	7/13/10	10:52 AM	1,603	Escherichia coli	111.9	#/100ml
FB1	Field Blank	7/13/10	9:17 AM	1,603	Escherichia coli	< 1.0	#/100ml
LB1	Lab Blank	7/13/10	1:31 PM	1,603	Escherichia coli	< 1.0	#/100ml
LD1	Lab Duplicate	7/13/10	9:59 AM	1,603	Escherichia coli	85.7	#/100ml
MRN1	Routine Sample	7/13/10	10:52 AM	1,603	Escherichia coli	135.4	#/100ml
MRN2	Routine Sample	7/13/10	10:28 AM	1,603	Escherichia coli	488.4	#/100ml
MRN3	Routine Sample	7/13/10	9:59 AM	1,603	Escherichia coli	74.9	#/100ml
MRN3.1	Routine Sample	7/13/10	10:13 AM	1,603	Escherichia coli	> 2419.6	#/100ml
USN1	Routine Sample	7/13/10	9:11 AM	1,603	Escherichia coli	206.4	#/100ml
BLK	Lab Blank	7/14/10		1,603	Escherichia coli	0	#/100ml
HQC	Field Duplicate	7/14/10	9:15 AM	1,603	Escherichia coli	64	#/100ml
MAC1	Routine Sample	7/14/10	10:00 AM	1,603	Escherichia coli	190	#/100ml
MAC2	Routine Sample	7/14/10	6:40 AM	1,603	Escherichia coli	150	#/100ml
MAC3	Routine Sample	7/14/10	7:10 AM	1,603	Escherichia coli	43	#/100ml
MAC4	Routine Sample	7/14/10		1,603	Escherichia coli	52	#/100ml
MAG4	Routine Sample	7/14/10	6:15 AM	1,603	Escherichia coli	114	#/100ml
MAH1	Routine Sample	7/14/10	8:45 AM	1,603	Escherichia coli	122	#/100ml

MAH2	Routine Sample	7/14/10	7:30 AM	1,603	Escherichia coli	85	#/100ml
MAH3	Routine Sample	7/14/10	9:30 AM	1,603	Escherichia coli	39	#/100ml
MAH4	Routine Sample	7/14/10	8:40 AM	1,603	Escherichia coli	7	#/100ml
BLK	Lab Blank	7/19/10		1,603	Escherichia coli	0	#/100ml
FRH1	Routine Sample	7/19/10	7:40 AM	1,603	Escherichia coli	178	#/100ml
FRH7	Routine Sample	7/19/10	7:15 AM	1,603	Escherichia coli	123	#/100ml
FRH9	Routine Sample	7/19/10	7:00 AM	1,603	Escherichia coli	119	#/100ml
HQC	Field Duplicate	7/19/10	9:50 AM	1,603	Escherichia coli	30	#/100ml
MRE1	Routine Sample	7/19/10	10:25 AM	1,603	Escherichia coli	139	#/100ml
MRE3	Routine Sample	7/19/10	10:35 AM	1,603	Escherichia coli	3	#/100ml
MRE6	Routine Sample	7/19/10	10:50 AM	1,603	Escherichia coli	110	#/100ml
MRH13	Routine Sample	7/19/10	9:50 AM	1,603	Escherichia coli	13	#/100ml
MRH2	Routine Sample	7/19/10	8:30 AM	1,603	Escherichia coli	238	#/100ml
MRH5	Routine Sample	7/19/10	8:50 AM	1,603	Escherichia coli	191	#/100ml
MRH8	Routine Sample	7/19/10	9:30 AM	1,603	Escherichia coli	157	#/100ml
BLK	Lab Blank	7/21/10		1,603	Escherichia coli	0	#/100ml
HQC	Field Duplicate	7/21/10		1,603	Escherichia coli	13	#/100ml
MAC1	Routine Sample	7/21/10	9:00 AM	1,603	Escherichia coli	139	#/100ml
MAC2	Routine Sample	7/21/10	8:40 AM	1,603	Escherichia coli	129	#/100ml
MAC3	Routine Sample	7/21/10	9:00 AM	1,603	Escherichia coli	46	#/100ml
MAC4	Routine Sample	7/21/10	8:35 AM	1,603	Escherichia coli	58	#/100ml
MAG4	Routine Sample	7/21/10	6:15 AM	1,603	Escherichia coli	23	#/100ml
MAH1	Routine Sample	7/21/10	9:40 AM	1,603	Escherichia coli	37	#/100ml
MAH2	Routine Sample	7/21/10	7:15 AM	1,603	Escherichia coli	29	#/100ml
MAH3	Routine Sample	7/21/10	7:20 AM	1,603	Escherichia coli	30	#/100ml
MAH4	Routine Sample	7/21/10	8:20 AM	1,603	Escherichia coli	12	#/100ml
BLK	Lab Blank	7/28/10		1,603	Escherichia coli	0	#/100ml
MAC1	Routine Sample	7/28/10	10:45 AM	1,603	Escherichia coli	223	#/100ml
MAC2	Routine Sample	7/28/10	9:26 AM	1,603	Escherichia coli	126	#/100ml
MAC3	Routine Sample	7/28/10	9:45 AM	1,603	Escherichia coli	35	#/100ml
MAC4	Routine Sample	7/28/10	7:49 AM	1,603	Escherichia coli	67	#/100ml
MAG4	Routine Sample	7/28/10	6:15 AM	1,603	Escherichia coli	12	#/100ml
MAH1	Routine Sample	7/28/10	9:25 AM	1,603	Escherichia coli	38	#/100ml

MAH2	Routine Sample	7/28/10	7:05 AM	1,603	Escherichia coli	31	#/100ml
MAH3	Routine Sample	7/28/10	8:05 AM	1,603	Escherichia coli	22	#/100ml
MAH4	Routine Sample	7/28/10	8:25 AM	1,603	Escherichia coli	13	#/100ml
MRS2	Routine Sample	7/28/10	8:40 AM	1,603	Escherichia coli	702	#/87
MRS3	Routine Sample	7/28/10	8:30 AM	1,603	Escherichia coli	1017	#/78
MRS4	Routine Sample	7/28/10	8:30 AM	1,603	Escherichia coli	24	#/100ml
QC	Field Duplicate	7/28/10	6:15 AM	1,603	Escherichia coli	11	#/100ml
BBSH4	Routine Sample	8/2/10	9:00 AM	1,603	Escherichia coli	223	#/100ml
BLK	Lab Blank	8/2/10		1,603	Escherichia coli	0	#/100ml
HQC	Field Duplicate	8/2/10	9:30 AM	1,603	Escherichia coli	135	#/100ml
SBSH2	Routine Sample	8/2/10	8:05 AM	1,603	Escherichia coli	249	#/100ml
SBSH4	Routine Sample	8/2/10	8:20 AM	1,603	Escherichia coli	66	#/100ml
SBSH5	Routine Sample	8/2/10	8:30 AM	1,603	Escherichia coli	294	#/100ml
WBH1	Routine Sample	8/2/10	9:30 AM	1,603	Escherichia coli	103	#/100ml
WBH3	Routine Sample	8/2/10	9:30 AM	1,603	Escherichia coli	138	#/100ml
BLK	Lab Blank	8/4/10		1,603	Escherichia coli	0	#/100ml
HQC	Field Duplicate	8/4/10	No Time	1,603	Escherichia coli	22	#/100ml
MAC1	Routine Sample	8/4/10	10:00 AM	1,603	Escherichia coli	90	#/100ml
MAC2	Routine Sample	8/4/10	9:31 AM	1,603	Escherichia coli	106	#/100ml
MAC3	Routine Sample	8/4/10	9:48 AM	1,603	Escherichia coli	24	#/100ml
MAC4	Routine Sample	8/4/10	8:15 AM	1,603	Escherichia coli	43	#/100ml
MAG4	Routine Sample	8/4/10	6:25 AM	1,603	Escherichia coli	35	#/100ml
MAH1	Routine Sample	8/4/10	No Time	1,603	Escherichia coli	26	#/100ml
MAH2	Routine Sample	8/4/10	8:30 AM	1,603	Escherichia coli	111	#/100ml
MAH3	Routine Sample	8/4/10	7:15 AM	1,603	Escherichia coli	25	#/100ml
MAH4	Routine Sample	8/4/10	7:15 AM	1,603	Escherichia coli	9	#/100ml
BLK	Lab Blank	8/9/10		1,603	Escherichia coli	0	#/100ml
FRH1	Routine Sample	8/9/10	8:15 AM	1,603	Escherichia coli	498	80
FRH7	Routine Sample	8/9/10	9:05 AM	1,603	Escherichia coli	128	90
FRH9	Routine Sample	8/9/10	8:50 AM	1,603	Escherichia coli	99	95
HQC	Field Duplicate	8/9/10	9:05 AM	1,603	Escherichia coli	103	80
MRH12	Routine Sample	8/9/10	7:25 AM	1,603	Escherichia coli	330	90
MRH13	Routine Sample	8/9/10	6:40 AM	1,603	Escherichia coli	56	100

MRH5	Routine Sample	8/9/10	7:15 AM	1,603	Escherichia coli	42	100
BLK	Lab Blank	8/11/10		1,603	Escherichia coli	0	100
HQC	Field Duplicate	8/11/10	7:35 AM	1,603	Escherichia coli	93	100
MAC1	Routine Sample	8/11/10	10:14 AM	1,603	Escherichia coli	1206	100
MAC2	Routine Sample	8/11/10	9:29 AM	1,603	Escherichia coli	109	100
MAC3	Routine Sample	8/11/10	9:47 AM	1,603	Escherichia coli	110	100
MAC4	Routine Sample	8/11/10	8:10 AM	1,603	Escherichia coli	121	95
MAG4	Routine Sample	8/11/10	6:15 AM	1,603	Escherichia coli	224	100
MAH1	Routine Sample	8/11/10	9:05 AM	1,603	Escherichia coli	108	85
MAH2	Routine Sample	8/11/10	7:35 AM	1,603	Escherichia coli	96	100
MAH3	Routine Sample	8/11/10	9:25 AM	1,603	Escherichia coli	54	100
MRE1	Routine Sample	8/11/10	7:35 AM	1,603	Escherichia coli	287	95
MRE2	Routine Sample	8/11/10	7:15 AM	1,603	Escherichia coli	263	95
MRE6	Routine Sample	8/11/10	7:50 AM	1,603	Escherichia coli	386	95
CFB1	Field Blank	8/12/10	10:01 AM	1,603	Escherichia coli	<1	100
CQC1 (1 mL dilutio	Field Duplicate	8/12/10	9:23 AM	1,603	Escherichia coli	745.0	1
CQC1 (10 mL dilution)	Field Duplicate	8/12/10	9:23 AM	1,603	Escherichia coli	1187.4	10
CQC1N	Field Duplicate	8/12/10	10:10 AM	1,603	Escherichia coli	488.4	100
CTRG1	Routine Sample	8/12/10	10:01 AM	1,603	Escherichia coli	1.0	100
CTRG2	Routine Sample	8/12/10	10:22 AM	1,603	Escherichia coli	6.3	100
CTRG3	Routine Sample	8/12/10	10:44 AM	1,603	Escherichia coli	67.7	100
CTRG4	Routine Sample	8/12/10	11:02 AM	1,603	Escherichia coli	10.7	100
FB1N	Field Blank	8/12/10	10:45 AM	1,603	Escherichia coli	<1	100
LB1	Lab Blank	8/12/10	2:12 PM	1,603	Escherichia coli	<1	100
LB1	Lab Blank	8/12/10	2:12 PM	1,603	Escherichia coli	<1	100
LD1	Lab Duplicate	8/12/10	10:44 AM	1,603	Escherichia coli	35.9	100
LD2	Lab Duplicate	8/12/10	9:05 AM	1,603	Escherichia coli	13.4	100
MBG1 (1 mL dilutio	Routine Sample	8/12/10	9:23 AM	1,603	Escherichia coli	724.0	1
MBG1 (10 mL diluti	Routine Sample	8/12/10	9:23 AM	1,603	Escherichia coli	986.7	10
MRN1	Routine Sample	8/12/10	10:36 AM	1,603	Escherichia coli	79.8	100
MRN2	Routine Sample	8/12/10	10:10 AM	1,603	Escherichia coli	307.6	100
MRN3	Routine Sample	8/12/10	9:44 AM	1,603	Escherichia coli	185.0	100

USN1	Routine Sample	8/12/10	9:05 AM	1,603	Escherichia coli	21.3	100
BLK	Lab Blank	8/18/10		1,603	Escherichia coli	0	100
HQC	Field Duplicate	8/18/10	10:00 AM	1,603	Escherichia coli	55	100
MAC1	Routine Sample	8/18/10	10:00 AM	1,603	Escherichia coli	41	100
MAC2	Routine Sample	8/18/10	9:38 AM	1,603	Escherichia coli	3	100
MAC3	Routine Sample	8/18/10	9:56 AM	1,603	Escherichia coli	18	100
MAC4	Routine Sample	8/18/10	8:15 AM	1,603	Escherichia coli	85	100
MAG4	Routine Sample	8/18/10	5:00 AM	1,603	Escherichia coli	2	100
MAH1	Routine Sample	8/18/10	7:15 AM	1,603	Escherichia coli	18	100
MAH2	Routine Sample	8/18/10	8:25 AM	1,603	Escherichia coli	6	100
MAH3	Routine Sample	8/18/10	7:20 AM	1,603	Escherichia coli	51	100
MAH4	Routine Sample	8/18/10	8:30 AM	1,603	Escherichia coli	12	100
BLK	Lab Blank	8/25/10		1,603	Escherichia coli	0	100
HQC	Field Duplicate	8/25/10	9:40 AM	1,603	Escherichia coli	76	100
MAC1	Routine Sample	8/25/10	10:15 AM	1,603	Escherichia coli	555	100
MAC2	Routine Sample	8/25/10	9:40 AM	1,603	Escherichia coli	77	100
MAC3	Routine Sample	8/25/10	9:58 AM	1,603	Escherichia coli	44	100
MAH1	Routine Sample	8/25/10	8:50 AM	1,603	Escherichia coli	48	100
MAH2	Routine Sample	8/25/10	7:05 AM	1,603	Escherichia coli	170	100
MAH3	Routine Sample	8/25/10	10:08 AM	1,603	Escherichia coli	84	100
MAH4	Routine Sample	8/25/10	7:50 AM	1,603	Escherichia coli	53	100
BBD1	Routine Sample	9/1/10	8:55 AM	1,603	Escherichia coli	152.9	100
BBD2	Routine Sample	9/1/10	9:15 AM	1,603	Escherichia coli	>2,419.6	100
BBD2	Routine Sample	9/1/10	9:15 AM	1,603	Escherichia coli	7,269.9	-
BBD3	Routine Sample	9/1/10	9:30 AM	1,603	Escherichia coli	547.5	100
BBD4	Routine Sample	9/1/10	9:45 AM	1,603	Escherichia coli	488.4	100
BBD5	Routine Sample	9/1/10	10:00 AM	1,603	Escherichia coli	275.5	100
BLK	Lab Blank	9/1/10		1,603	Escherichia coli	0	#/100ml
CQC1D	Field Duplicate	9/1/10	9:30 AM	1,603	Escherichia coli	613.1	#/100ml
CQC1M	Field Blank	9/1/10	10:47 AM	1,603	Escherichia coli	<1	100
CQC2M	Field Duplicate	9/1/10	11:08 AM	1,603	Escherichia coli	3.0	100
CTRG1	Routine Sample	9/1/10	10:17 AM	1,603	Escherichia coli	2.0	100
CTRG2	Routine Sample	9/1/10	10:33 AM	1,603	Escherichia coli	2.0	250

CTRG3	Routine Sample	9/1/10	10:57 AM	1,603	Escherichia coli	38.4	100
CTRG4	Routine Sample	9/1/10	11:08	1,603	Escherichia coli	4.1	100
FB1D	Field Blank	9/1/10	10:20 AM	1,603	Escherichia coli	<1	#/100ml
HQC	Field Duplicate	9/1/10	9:55 AM	1,603	Escherichia coli	28	#/100ml
LD1	Lab Duplicate	9/1/10	10:33 AM	1,603	Escherichia coli	1.0	-
LD2	Lab Duplicate	9/1/10	10:50 AM	1,603	Escherichia coli	275.5	-
MAC1	Routine Sample	9/1/10	9:30 AM	1,603	Escherichia coli	275	#/100ml
MAC2	Routine Sample	9/1/10	*9:37 AM*	1,603	Escherichia coli	100	#/100ml
MAC3	Routine Sample	9/1/10	9:55 AM	1,603	Escherichia coli	31	#/100ml
MAC4	Routine Sample	9/1/10	9:15 AM	1,603	Escherichia coli	108	#/100ml
MAH1	Routine Sample	9/1/10	7:25 AM	1,603	Escherichia coli	154	#/100ml
MAH2	Routine Sample	9/1/10	7:48 AM	1,603	Escherichia coli	134	#/100ml
MAH3	Routine Sample	9/1/10	9:45 AM	1,603	Escherichia coli	37	#/100ml
MAH4	Routine Sample	9/1/10	9:15 AM	1,603	Escherichia coli	20	#/100ml
MBG1 (10 mL dilution)	Routine Sample	9/1/10	9:51 AM	1,603	Escherichia coli	>24,196.0	10
SBW1	Routine Sample	9/1/10	11:00 AM	1,603	Escherichia coli	235.9	100
SBW2	Routine Sample	9/1/10	10:50 AM	1,603	Escherichia coli	290.9	250
SBW3	Routine Sample	9/1/10	10:35 AM	1,603	Escherichia coli	108.6	#/100ml
SBW4	Routine Sample	9/1/10	10:20 AM	1,603	Escherichia coli	155.3	#/100ml
BLK	Lab Blank	9/8/10		1,603	Escherichia coli	0	#/100ml
HQC	Field Duplicate	9/8/10	8:40 AM	1,603	Escherichia coli	56	#/100ml
MAC1	Routine Sample	9/8/10	10:30 AM	1,603	Escherichia coli	467	#/100ml
MAC2	Routine Sample	9/8/10	9:38 AM	1,603	Escherichia coli	81	#/100ml
MAC3	Routine Sample	9/8/10	9:55 AM	1,603	Escherichia coli	348	#/100ml
MAC4	Routine Sample	9/8/10	7:10 AM	1,603	Escherichia coli	300	#/100ml
MAG4	Routine Sample	9/8/10	6:15 AM	1,603	Escherichia coli	21	#/100ml
MAH1	Routine Sample	9/8/10	8:25 AM	1,603	Escherichia coli	21	#/100ml
MAH2	Routine Sample	9/8/10	9:10 AM	1,603	Escherichia coli	80	#/100ml
MAH3	Routine Sample	9/8/10	8:40 AM	1,603	Escherichia coli	50	#/100ml
MAH4	Routine Sample	9/8/10	8:20 AM	1,603	Escherichia coli	4	#/100ml
BLK	Lab Blank	9/15/10		1,603	Escherichia coli	0	#/100ml
CQC1	Field Duplicate	9/15/10	9:45 AM	1,603	Escherichia coli	204.6	#/100ml

FB1	Field Blank	9/15/10	10:40 AM	1,603	Escherichia coli	< 1.0	#/100ml
HQC	Field Duplicate	9/15/10	8:16 AM	1,603	Escherichia coli	44	#/100ml
LB1	Lab Blank	9/15/10	12:53 PM	1,603	Escherichia coli	< 1.0	#/100ml
LD1	Lab Duplicate	9/15/10	9:10 AM	1,603	Escherichia coli	3.1	#/100ml
MAC1	Routine Sample	9/15/10	10:15 AM	1,603	Escherichia coli	425	#/100ml
MAC2	Routine Sample	9/15/10	9:33 AM	1,603	Escherichia coli	57	#/100ml
MAC3	Routine Sample	9/15/10	9:51 AM	1,603	Escherichia coli	12	#/100ml
MAC4	Routine Sample	9/15/10	8:16 AM	1,603	Escherichia coli	41	#/100ml
MAG4	Routine Sample	9/15/10	5:00 AM	1,603	Escherichia coli	3	#/100ml
MAH1	Routine Sample	9/15/10	9:30 AM	1,603	Escherichia coli	26	#/100ml
MAH2	Routine Sample	9/15/10	7:35 AM	1,603	Escherichia coli	46	#/100ml
MAH3	Routine Sample	9/15/10	10:03 AM	1,603	Escherichia coli	40	#/100ml
MAH4	Routine Sample	9/15/10	8:30 AM	1,603	Escherichia coli	3	#/100ml
MRN1	Routine Sample	9/15/10	10:40 AM	1,603	Escherichia coli	60.2	#/100ml
MRN2	Routine Sample	9/15/10	10:20 AM	1,603	Escherichia coli	770.1	#/100ml
MRN2.1	Routine Sample	9/15/10	10:05 AM	1,603	Escherichia coli	613.1	#/100ml
MRN3	Routine Sample	9/15/10	9:45 AM	1,603	Escherichia coli	187.2	#/100ml
MRN3.1	Routine Sample	9/15/10		1,603	Escherichia coli	Dry: Not sampled	#/100ml
USN1	Routine Sample	9/15/10	9:10 AM	1,603	Escherichia coli	2.0	#/100ml
BBD1	Routine Sample	9/21/10	10:20 AM	1,603	Escherichia coli	67.0	#/100ml
BBD2	Routine Sample	9/21/10	10:36 AM	1,603	Escherichia coli	1,203.3	#/100ml
BBD2	10 mL Dilution of BB	9/21/10	10:36 AM	1,603	Escherichia coli	1,046.0	#/100ml
BBD3	Routine Sample	9/21/10	10:50 AM	1,603	Escherichia coli	206.4	#/100ml
BBD4	Routine Sample	9/21/10	11:04 AM	1,603	Escherichia coli	461.1	#/100ml
BBD5	Routine Sample	9/21/10	11:14 AM	1,603	Escherichia coli	248.1	#/100ml
CFB1/FB1D	Field Blank	9/21/10	10:20 AM	1,603	Escherichia coli	<1	#/100ml
CQC1D	Field Duplicate	9/21/10	12:05 PM	1,603	Escherichia coli	209.8	#/100ml
LB1	Lab blank	9/21/10	3:04 PM	1,603	Escherichia coli	<1	#/100ml
LD1	Lab Duplicate	9/21/10	11:45 AM	1,603	Escherichia coli	67.7	#/100ml
SBW1	Routine Sample	9/21/10	12:05	1,603	Escherichia coli	224.7	#/100ml
SBW2	Routine Sample	9/21/10	11:53 AM	1,603	Escherichia coli	131.4	#/100ml
SBW3	Routine Sample	9/21/10	11:45 AM	1,603	Escherichia coli	80.9	#/100ml

SBW4	Routine Sample	9/21/10	11:34 AM	1,603	Escherichia coli	104.6	#/100ml
BLK	Lab blank	9/22/10		1,603	Escherichia coli	0	#/100ml
HQC	Field Duplicate	9/22/10	8:30 AM	1,603	Escherichia coli	6	#/100ml
MAC1	Routine Sample	9/22/10	10:25 AM	1,603	Escherichia coli	100	#/100ml
MAC2	Routine Sample	9/22/10	9:40 AM	1,603	Escherichia coli	57	#/100ml
MAC3	Routine Sample	9/22/10	9:56 AM	1,603	Escherichia coli	15	#/100ml
MAC4	Routine Sample	9/22/10	7:45 AM	1,603	Escherichia coli	33	#/100ml
MAG4	Routine Sample	9/22/10	6:15 AM	1,603	Escherichia coli	9	#/100ml
MAH1	Routine Sample	9/22/10	8:15 AM	1,603	Escherichia coli	5	#/100ml
MAH2	Routine Sample	9/22/10	8:28 AM	1,603	Escherichia coli	104	#/100ml
MAH3	Routine Sample	9/22/10	8:25 AM	1,603	Escherichia coli	20	#/100ml
MAH4	Routine Sample	9/22/10	8:30 AM	1,603	Escherichia coli	7	#/100ml
HQC	Field Duplicate	9/29/10	6:00 AM	1,603	Escherichia coli	220	#/100ml
MAC1	Routine Sample	9/29/10	10:30 AM	1,603	Escherichia coli	TNTC	#/100ml
MAC1B	Routine Sample	9/29/10	10:30 AM	1,603	Escherichia coli	TNTC	#/100ml
MAC2	Routine Sample	9/29/10	9:42 AM	1,603	Escherichia coli	121	#/100ml
MAC2	Routine Sample	9/29/10	7:35 AM	1,603	Escherichia coli	133	#/100ml
MAC3	Routine Sample	9/29/10	10:00 AM	1,603	Escherichia coli	115	#/100ml
MAC3	Routine Sample	9/29/10	7:55 AM	1,603	Escherichia coli	136	#/100ml
MAC4	Routine Sample	9/29/10	7:50 AM	1,603	Escherichia coli	86	#/100ml
MAG4	Routine Sample	9/29/10	6:00 AM	1,603	Escherichia coli	171	#/100ml
MAH1	Routine Sample	9/29/10	9:40 AM	1,603	Escherichia coli	126	#/100ml
MAH2	Routine Sample	9/29/10	7:15 AM	1,603	Escherichia coli	200	#/100ml
MAH4	Routine Sample	9/29/10	8:30 AM	1,603	Escherichia coli	230	#/100ml
BLK	Lab Blank	10/6/10		1,603	Escherichia coli	0	#/100ml
DUP	Field Duplicate	10/6/10	7:30 AM	1,603	Escherichia coli	73	#/100ml
MAC1	Routine Sample	10/6/10	10:40 AM	1,603	Escherichia coli	TNTC	#/100ml
MAC2	Routine Sample	10/6/10	9:05 AM	1,603	Escherichia coli	450	#/10ml
MAC3	Routine Sample	10/6/10	8:18 AM	1,603	Escherichia coli	107	#/100ml
MAC4	Routine Sample	10/6/10	7:10 AM	1,603	Escherichia coli	144	#/100ml
MAH1	Routine Sample	10/6/10	7:30 AM	1,603	Escherichia coli	28	#/100ml
MAH2	Routine Sample	10/6/10	7:00 AM	1,603	Escherichia coli	78	#/100ml
MAH3	Routine Sample	10/6/10	9:50 AM	1,603	Escherichia coli	89	#/100ml

MAG4	Routine Sample	10/6/10	6:15 AM	1,603	Escherichia coli	33	#/100ml
BLK	Lab Blank	10/12/10		1,603	Escherichia coli	0	#/100ml
FRH1	Routine Sample	10/12/10	8:50:00	1,603	Escherichia coli	255	#/100ml
FRH2	Routine Sample	10/12/10	8:40 AM	1,603	Escherichia coli	835	#/100ml
FRH5	Routine Sample	10/12/10	8:25 AM	1,603	Escherichia coli	84	#/100ml
BLK	Lab Blank	10/18/10		1,603	Escherichia coli	0	#/100ml
HQC	Field Duplicate	10/18/10		1,603	Escherichia coli	128	#/100ml
MRS2	Routine Sample	10/18/10	9:23 AM	1,603	Escherichia coli	115	#/100ml
MRS3	Routine Sample	10/18/10	9:46 AM	1,603	Escherichia coli	135	#/100ml
MRS4	Routine Sample	10/18/10	9:00 AM	1,603	Escherichia coli	10	#/100ml
BBD2.1	Routine Sample	10/20/2010	9:25:00	1,603	Escherichia coli	139.6	#/100ml
BBD2.2	Routine Sample	10/20/2010	9:45:00	1,603	Escherichia coli	235.9	#/100ml
BBD3.1	Routine Sample	10/20/2010	10:05:00	1,603	Escherichia coli	866.4	#/100ml
BBD4.1	Routine Sample	10/20/2010	10:25:00	1,603	Escherichia coli	517.2	#/100ml
SBW1.1	Routine Sample	10/20/2010	10:45:00	1,603	Escherichia coli	238.2	#/100ml
CQC1	Field Duplicate	10/20/2010	9:25:00	1,603	Escherichia coli	178.5	#/100ml
FB1	Field Blank	10/20/2010	9:48:00	1,603	Escherichia coli	<1	#/100ml
LD1	Lab Duplicate	10/20/2010	10:25:00	1,603	Escherichia coli	261.3	#/100ml
MRN2.1	Routine Sample	10/26/2010	10:35:00	1603	Escherichia coli	110	#/100ml
MRN2.2	Routine Sample	10/26/2010	10:10:00	1603	Escherichia coli	3.1	#/100ml
MRN2.3	Routine Sample	10/26/2010	10:55:00	1603	Escherichia coli	>2,419.6	#/100ml
MRN2.4	Routine Sample	10/26/2010	11:10:00	1603	Escherichia coli	2419.6	#/100ml
LD1	Lab Duplicate	10/26/2010	11:10:00	1603	Escherichia coli	1553.1	#/100ml
MRN2.5	Routine Sample	10/26/2010	11:25:00	1603	Escherichia coli	<1	#/100ml
MRN3.1	Routine Sample	10/26/2010	11:45:00	1603	Escherichia coli	5247.3	#/100ml
CQC1	Field Duplicate	10/26/2010	10:35:00	1603	Escherichia coli	96	#/100ml
FB1	Field Blank	10/26/2010	12:30:00	1603	Escherichia coli	<1	#/100ml
LB1	Lab Blank	10/26/2010	10:25:00	1603	Escherichia coli	<1	#/100ml

Sample Date	Sample ID	Site Name	Lab Sample ID	Time collected	Time delivered to lab	Within holding time (6 hrs)?	Preservation temperature (deg C)	Preservation ~4 deg C?	Method	Analyte	Volume	Quanti-Tray/2000 Positive Large Wells	Quanti-Tray/2000 Positive Small Wells	MPN/100mL Undiluted Sample	Upper 95% confidence limit Undiluted Sample	Lower 95% confidence limit Undiluted Sample	Lab	Analyst
6/8/2011	MAG4	Barton Cove	28-01	10:55	11:48	Yes	7.8	No	Colilert	E. coli	100	38	8	83.9	59.8	112.8	CRWC	Andrea Donlon
6/8/2011	QC1	Quality Contr	28-02	10:57	11:48	Yes	9.8	No	Colilert	E. coli	100	0	0	< 1.0	0.0	3.7	CRWC	Andrea Donlon
6/8/2011	MAC1	Bassett boat	28-03	8:55	11:48	Yes	7.6	No	Colilert	E. coli	100	46	7	133.3	92.4	186.9	CRWC	Andrea Donlon
6/8/2011	MAC2	Davitt Br., Gr	28-04	8:15	11:48	Yes	6.6	No	Colilert	E. coli	100	41	8	98.7	72.3	133.7	CRWC	Andrea Donlon
6/8/2011	MAC3	Medina Stree	28-05	8:30	11:48	Yes	6.3	No	Colilert	E. coli	100	22	3	32.3	21.1	47.2	CRWC	Andrea Donlon
6/8/2011	MAC4	Berchulski Fisherman Access	28-06	8:45	11:48	Yes	7.6	No	Colilert	E. coli	100	48	8	165.8	114.9	238.0	CRWC	Andrea Donlon
6/8/2011	QC2	Quality Contr	28-07	8:45	11:48	Yes	6.7	No	Colilert	E. coli	100	49	15	261.3	170.9	398.5	CRWC	Andrea Donlon
6/8/2011	MAH1	Pioneer Valle	28-08	7:49	11:48	Yes	5.3	No	Colilert	E. coli	100	25	1	35.0	22.9	51.2	CRWC	Andrea Donlon
6/8/2011	MAH2	Pynchon Poir	28-09	8:30	11:48	Yes	7.3	No	Colilert	E. coli	100	39	8	88.4	63.0	119.2	CRWC	Andrea Donlon
6/8/2011	MAH3	Jones Ferry,	28-10	8:45	11:48	Yes	6.6	No	Colilert	E. coli	100	19	2	25.9	16.4	39.1	CRWC	Andrea Donlon
6/8/2011	MAH4	Brunelle's Ma	28-11	8:45	11:48	Yes	5.9	No	Colilert	E. coli	100	44	5	108.6	77.4	150.0	CRWC	Andrea Donlon
6/8/2011	LD	Lab Duplicate	28-12	8:45	11:48	Yes	5.9	No	Colilert	E. coli	100	39	8	88.4	63.0	119.2	CRWC	Andrea Donlon
6/8/2011	LB	Lab Blank	28-13	13:40	13:40	Yes	NA	NA	Colilert	E. coli	100	0	0	< 1.0	0.0	3.7	CRWC	Andrea Donlon
6/8/2011	EC	E. Coli culture	28-14	13:42	13:42	Yes	NA	NA	Colilert	E. coli	100	49	48	> 2419.6	1,439.5	infini.e	CRWC	Andrea Donlon
6/8/2011	PA	Psudomonas	28-15	13:43	13:43	Yes	NA	NA	Colilert	E. coli	100	0	0	< 1.0	0.0	3.7	CRWC	Andrea Donlon
6/15/2011	MAC1	Bassett boat	29-01	9:10	11:15	Yes	5.9	No	Colilert	E. coli	100	p	49	34	770.1	549.0	1,094.0	CRWC Andrea Donlon
6/15/2011	MAC2	Davitt Br., Gr	29-02	8:55	11:15	Yes	5.6	No	Colilert	E. coli	100		39	3	76.7	54.6	106.2	CRWC Andrea Donlon
6/15/2011	MAC3	Medina Stree	29-03	8:35	11:15	Yes	3.9	Yes	Colilert	E. coli	100	v	44	3	102.2	70.9	142.2	CRWC Andrea Donlon
6/15/2011	MAC4	Berchulski Fisherman Access	29-04	8:45	11:15	Yes	3.7	Yes	Colilert	E. coli	100	v	41	5	90.6	64.6	124.1	CRWC Andrea Donlon
6/15/2011	MAH1	Pioneer Valle	29-05	8:20	11:15	Yes	2.9	Yes	Colilert	E. coli	100		45	7	123.6	85.7	170.1	CRWC Andrea Donlon
6/15/2011	MAH2	Pynchon Poir	29-06	9:00	11:15	Yes	2.1	Yes	Colilert	E. coli	100		49	30	613.1	401.2	879.2	CRWC Andrea Donlon
6/15/2011	MAH3	Jones Ferry,	29-07	8:20	11:15	Yes	4.6	Yes	Colilert	E. coli	100		48	13	201.4	135.7	284.0	CRWC Andrea Donlon
6/15/2011	MAH4	Brunelle's Ma	29-08	9:00	11:15	Yes	5.4	No	Colilert	E. coli	100		33	4	58.3	40.5	80.6	CRWC Andrea Donlon
6/15/2011	QC10	Quality Contr	29-09	9:10	11:15	Yes	8.2	No	Colilert	E. coli	100		48	25	344.1	245.3	472.5	CRWC Andrea Donlon
6/15/2011	QC12	Quality Contr	29-10	9:00	11:15	Yes	4.1	Yes	Colilert	E. coli	100		0	0	< 1.0	0.0	3.7	CRWC Andrea Donlon
6/15/2011	LD	Lab Duplicate	29-11	8:20	11:15	Yes	2.9	Yes	Colilert	E. coli	100		44	9	122.3	87.2	167.2	CRWC Andrea Donlon
6/15/2011	LB	Lab Blank	29-12	13:20	13:20	Yes	NA	NA	Colilert	E. coli	100		0	0	< 1.0	0.0	3.7	CRWC Andrea Donlon
6/15/2011	EC	E. Coli culture	29-13	13:21	13:21	Yes	NA	NA	Colilert	E. coli	100		49	48	> 2419.6	1,439.5	infini.e	CRWC Andrea Donlon
6/15/2011	PA	Psudomonas	29-14	13:22	13:22	Yes	NA	NA	Colilert	E. coli	100		0	0	< 1.0	0.0	3.7	CRWC Andrea Donlon
6/15/2011	MAG4	Barton Cove	29-15	12:10	12:30	Yes	12.5	No	Colilert	E. coli	100		48	16	228.2	158.2	323.1	CRWC Andrea Donlon
5/25/2011	MAC1	Bassett	24-01	9:11	11:20	Yes	6.1	No	Colilert	E. coli	100	46	22	217.8	159.5	290.4	CRWC	Peggy Savage
5/25/2011	MAC2	Davitt Br., Gr	24-02	8:00	11:20	Yes	4.3	No	Colilert	E. coli	100	46	9	142.1	101.3	196.8	CRWC	Peggy Savage
5/25/2011	MAC3	Medina Stree	24-03	8:38	11:20	Yes	3.9	Yes	Colilert	E. coli	100	40	5	85.7	61.1	117.2	CRWC	Peggy Savage
5/25/2011	MAC4	Berchulski Fisherman Access	24-04	8:45	11:20	Yes	3.9	Yes	Colilert	E. coli	100	46	1	109.8	76.1	155.9	CRWC	Peggy Savage
5/25/2011	MAH1	Pioneer Valle	24-05	7:55	11:20	Yes	6.4	No	Colilert	E. coli	100	45	12	143.9	102.6	195.0	CRWC	Peggy Savage
5/25/2011	MAH2	Pynchon Poir	24-06	9:00	11:20	Yes	4.6	No	Colilert	E. coli	100	46	11	151.5	108.0	207.8	CRWC	Peggy Savage
5/25/2011	MAH3	Jones Ferry,	24-07	8:10	11:20	Yes	6.6	No	Colilert	E. coli	100	32	5	57.3	39.7	79.1	CRWC	Peggy Savage
5/25/2011	MAH4	Brunelle's	24-08	9:00	11:20	Yes	7.1	No	Colilert	E. coli	100	26	4	41.4	27.9	58.6	CRWC	Peggy Savage
5/25/2011	MAG4	Barton Cove	24-09	11:20	11:45	Yes	8.3	No	Colilert	E. coli	100	49	44	1,553.1	1,016.2	2,353.1	CRWC	Peggy Savage
5/25/2011	QC1	Quality Contr	24-10	7:55	11:20	Yes	3.9	Yes	Colilert	E. coli	100	44	12	133.4	95.1	177.9	CRWC	Peggy Savage
5/25/2011	LD1	Lab Duplicate	24-11	9:00	11:20	Yes	4.6	No	Colilert	E. coli	100	46	14	167.0	119.0	227.9	CRWC	Peggy Savage
5/25/2011	QC3	Quality Contr	24-12	9:11	11:20	Yes	8.1	No	Colilert	E. coli	100	0	0	<1	0.0	3.7	CRWC	Peggy Savage
5/25/2011	LB1	Lab Blank	24-13	12:26	12:26	Yes	NA	NA	Colilert	E. coli	100	0	0	<1	0.0	3.7	CRWC	Peggy Savage
5/25/2011	EC	E. Coli culture	24-14	12:28	12:28	Yes	NA	NA	Colilert	E. coli	100	49	48	>2,419.6	1,439.5	Infinite	CRWC	Peggy Savage
5/25/2011	PA	Psudomonas	24-15	12:30	12:30	Yes	NA	NA	Colilert	E. coli	100	0	0	<1	0.0	3.7	CRWC	Peggy Savage
6/22/2011	LB1	Lab Blank	31-06	10:28	10:28	Yes	NA	NA	Colilert	E. coli	100	0	0	<1	0.0	3.7	CRWC	Peggy Savage
6/22/2011	EC	E. Coli culture	31-07	10:31	10:31	Yes	NA	NA	Colilert	E. coli	100	49	48	>2,419.6	1,439.5	Infinite	CRWC	Peggy Savage
6/22/2011	PA	Psudomonas	31-08	10:33	10:33	Yes	NA	NA	Colilert	E. coli	100	0	0	<1	0.0	3.7	CRWC	Peggy Savage
6/22/2011	MAC1	Bassett Launch	31-36	10:55	12:00	Yes	2.3	Yes	Colilert	E. coli	100	49	47	2,419.6	1,630.4	4,716.1	CRWC	Peggy Savage
6/22/2011	MAC3	Medina Stree	31-37	8:45	12:00	Yes	2.3	Yes	Colilert	E. coli	100	27	2	40.4	27.3	57.4	CRWC	Peggy Savage
6/22/2011	MAC4	Berchulski Fis	31-38	8:45	12:00	Yes	2.4	Yes	Colilert	E. coli	100	48	12	193.5	130.4	279.5	CRWC	Peggy Savage
6/22/2011	MAH2	Pynchon Poir	31-39	8:30	12:00	Yes	3.6	Yes	Colilert	E. coli	100	42	7	101.7	72.5	138.2	CRWC	Peggy Savage
6/22/2011	MAH3	Jones Ferry,	31-40	9:25	12:00	Yes	3.9	Yes	Colilert	E. coli	100	22	4	33.6	22.0	48.8	CRWC	Peggy Savage
6/22/2011	MAH4	Brunelle's	31-41	8:30	12:00	Yes	3.1	Yes	Colilert	E. coli	100	44	9	122.3	87.2	167.2	CRWC	Peggy Savage
6/22/2011	QC13*	Quality Contr	31-42	9:25	12:00	Yes	3.3	Yes	Colilert	E. coli	100	23	4	35.5	23.9	51.0	CRWC	Peggy Savage
6/22/2011	QC14**	Quality Contr	31-43	8:20	12:00	Yes	2.7	Yes	Colilert	E. coli	100	43	7	108.1	77.0	147.2	CRWC	Peggy Savage
6/22/2011	LD2	Lab Duplicate	31-44	8:20	12:00	Yes	2.7	Yes	Colilert	E. coli	100	42	10	110.6	81.0	148.8	CRWC	Peggy Savage
6/22/2011	QC15**	Quality Contr	31-45	8:45	12:00	Yes	2.1	Yes	Colilert	E. coli	100	28	3	44.1	30.6	62.5	CRWC	Peggy Savage
6/29/2011	MAC1	Bassett Launch	33-1	8:45	11:05	Yes	6.1	No	Colilert	E. coli	100	49	48	>2,419.6	1,439.5	Infinite	CRWC	Peggy Savage
6/29/2011	MAH1	PVYC, Longm	33-2	7:45	11:05	Yes	5.8	No	Colilert	E. coli	100	49	46	1,986.3**	1,222.0	3,300.2	CRWC	Peggy Savage

6/29/2011	MAH2	Pynchon Poir	33-3	8:30	11:05	Yes	5.3	No	Colilert	E. coli	100	49	35	816.4	550.1	1,174.6	CRWC	Peggy Savage
6/29/2011	MAH3	Jones Ferry.	33-4	9:15	11:05	Yes	2.8	Yes	Colilert	E. coli	100	49	21	365.4	231.9	555.5	CRWC	Peggy Savage
6/29/2011	QC17	Quality Contr	33-5	8:40	11:05	Yes	2.4	Yes	Colilert	E. coli	100	45	15	157.6	115.4	212.3	CRWC	Peggy Savage
6/29/2011	LD1	Lab Duplicate	33-6	8:40	11:05	Yes	2.4	Yes	Colilert	E. coli	100	48	14	209.8	145.4	301.1	CRWC	Peggy Savage
6/29/2011	QC18A*	Quality Contr	33-7	8:30 (on bottle),9:00 (on COC)	11:05	Yes	5.3	No	Colilert	E. coli	100	49	36	866.4	583.8	1,245.4	CRWC	Peggy Savage
6/29/2011	QC18B*	Quality Contr	33-8	8:30 (on bottle),9:00 (on COC)	11:05	Yes	6.1	No	Colilert	E. coli	100	0	0	<1	0.0	3.7	CRWC	Peggy Savage
6/29/2011	EC	E. Coli culture	33-9	11:56	11:56	Yes	NA	NA	Colilert	E. coli	100	49	48	>2,419.6	1,439.5	Infinite	CRWC	Peggy Savage
6/29/2011	PA	Psudomonas	33-10	11:58	11:58	Yes	NA	NA	Colilert	E. coli	100	0	0	<1	0.0	3.7	CRWC	Peggy Savage
6/29/2011	MAG4	Quality Contr	33-11	11:30	12:03	Yes	9.6	No	Colilert	E. coli	100	49	12	224.7	147.0	343.5	CRWC	Peggy Savage
6/29/2011	QC16	Quality Contr	33-12	11:30	12:03	Yes	11.6	No	Colilert	E. coli	100	49	19	325.5	206.6	498.1	CRWC	Peggy Savage

CRWC Samples
with Greenfield DPW
5/2/11

Sample Date	Sample ID	Site Name	Lab Sample ID	Time collected	Time delivered to lab	Within holding time (6 hrs)?	Preservation temperature (deg C)	Preservation ~4 deg C?	Method	Analyte	Volume	Quanti-Tray/2000 Positive Large Wells	Quanti-Tray/2000 Positive Small Wells	MPN/100mL Undiluted Sample	Lower 95% confidence limit Undiluted Sample	Upper 95% confidence limit Undiluted Sample	Lab	Analyst
5/2/2011	MBG-2	S. Side Spring Terrace	20-1	11:20	12:25	Yes	1.6	Yes	Colilert	E. coli	100	34	9	70.8	50.5	94.6	CRWC	Peggy Savage
5/2/2011	MBG-3	Highland Pond at outlet	20-2	12:05	12:25	Yes	9.9	No	Colilert	E. coli	100	0	0	<1	0.0	3.7	CRWC	Peggy Savage
5/2/2011	MBG-A	Colrain Street (where it daylights)	20-3	9:05	12:25	Yes	1.3	Yes	Colilert	E. coli	100	49	48	>2,419.6	1,439.5	Infinite	CRWC	Peggy Savage
5/2/2011	MBG-B	53 Conway Street, west side	20-4	8:20	12:25	Yes	1.1	Yes	Colilert	E. coli	100	49	48	>2,419.6	1,439.5	Infinite	CRWC	Peggy Savage
5/2/2011	MBG-C	147 School Street, east side	20-5	8:45	12:25	Yes	1.1	Yes	Colilert	E. coli	100	49	48	>2,419.6	1,439.5	Infinite	CRWC	Peggy Savage
5/2/2011	MBG-D	17 Garfield Street, south side	20-6	9:40	12:25	Yes	0.8	Yes	Colilert	E. coli	100	49	48	>2,419.6	1,439.5	Infinite	CRWC	Peggy Savage
5/2/2011	LD1	Lab duplicate of MBG-D	20-7	9:40	12:25	Yes	0.8	Yes	Colilert	E. coli	100	49	48	>2,419.6	1,439.5	Infinite	CRWC	Peggy Savage
5/2/2011	MBG-G	Entrance to CVS off Maple St	20-8	9:55	12:25	Yes	1.3	Yes	Colilert	E. coli	100	45	13	148.3	105.7	199.9	CRWC	Peggy Savage
5/2/2011	MBG-H	Sanderson Street, Kennametal	20-9	10:10	12:25	Yes	1.3	Yes	Colilert	E. coli	100	49	23	410.6	260.6	618.9	CRWC	Peggy Savage
5/2/2011	MBG-I	35 & 36 Haywood, south side	20-10	10:20	12:25	Yes	1.9	Yes	Colilert	E. coli	100	49	48	>2,419.6	1,439.5	Infinite	CRWC	Peggy Savage
5/2/2011	MBG-J	36 Lincoln Street, lawn	20-11	10:35	12:25	Yes	1.4	Yes	Colilert	E. coli	100	48	18	248.9	172.6	350.2	CRWC	Peggy Savage
5/2/2011	MBG-K	39 Freeman Drive	20-12	11:00	12:25	Yes	1.4	Yes	Colilert	E. coli	100	15	1	18.7	10.8	30.0	CRWC	Peggy Savage
5/2/2011	MBG-L	101 Maple Street	20-13	10:50	12:25	Yes	1.3	Yes	Colilert	E. coli	100	43	10	117.8	86.3	158.2	CRWC	Peggy Savage
5/2/2011	MBG-M	16 Walnut Street, north side	20-14	11:45	12:25	Yes	4.8	No	Colilert	E. coli	100	38	4	74.9	53.4	102.9	CRWC	Peggy Savage
5/2/2011	LD2	Lab duplicate of MBG-M	20-15	11:45	12:25	Yes	4.8	No	Colilert	E. coli	100	44	5	108.6	77.4	150.0	CRWC	Peggy Savage
5/2/2011	QC1	Quality Control Sample 1	20-16	8:45	12:25	Yes	0.9	Yes	Colilert	E. coli	100	49	48	>2,419.6	1,439.5	Infinite	CRWC	Peggy Savage
5/2/2011	QC2	Quality Control Sample 2	20-17	10:30	12:25	Yes	1.3	Yes	Colilert	E. coli	100	0	0	<1	0.0	3.7	CRWC	Peggy Savage
5/2/2011	QC3	Quality Control Sample 3	20-18	12:05	12:25	Yes	9.4	No	Colilert	E. coli	100	0	0	<1	0.0	3.7	CRWC	Peggy Savage
5/2/2011	EC	E. Coli culture QC	20-19	14:29	14:29	Yes	NA	NA	Colilert	E. coli	100	49	48	>2,419.6	1,439.5	Infinite	CRWC	Peggy Savage
5/2/2011	PA	Psudomonas culture QC	20-20	14:30	14:30	Yes	NA	NA	Colilert	E. coli	100	0	0	<1	0.0	3.7	CRWC	Peggy Savage
5/2/2011	LB1	Lab Blank	20-21	14:27	14:27	Yes	NA	NA	Colilert	E. coli	100	0	0	<1	0.0	3.7	CRWC	Peggy Savage

APPENDIX E

QC Data 2010

CRWC Samples

QC and relevant site:	Date	Result	Log10 transformed result	RPD Log10	
Group A					
CTRG1	7/7/2010	1.0	0	200.0%	If result is <1 do you count it as 0.5 for this purpose????
	Field Dup	13.2	1.120573931		
CTRG4	7/7/2010	9.7	0.986771734	200.0%	
	LabDup	1.0	0		
Group A					
MBG1 (1 ml dilution)	8/12/2010	724.0	2.859738566	0.4%	
	Field rep	745.0	2.872156273		
MBG1 (10 ml dilution)	8/12/2010	986.7	2.994185128	2.7%	
	Field rep	1187.4	3.074597045		
CTRG3	8/12/2010	67.7	1.830588669	16.3%	
	Lab Dup	35.9	1.555094449		
Group A					
CTRG4	9/1/2010	4.1	0.612783857	24.9%	If result is <1 do you count it as 0.5 for this purpose????
	Field Dup	3.0	0.477121255		
CTRG2	9/1/2010	2.0	0.301029996	200.0%	
	LabDup	1.0	0		
Group B					
BBD1	8/4/2010	71.7	1.855519156	6.6%	
	Field Rep	96	1.982271233		
BBD4	8/4/2010	579.4	2.762978491	0.0%	
	Lab Dup	579.4	2.762978491		
Group B					
BBD3	9/1/2010	547.5	2.738384124	1.8%	
	Field Rep	613.1	2.787531316		
SBW2	9/1/2010	290.9	2.463743721	1.0%	
	Lab Dup	275.5	2.440121603		
Group C					
MRN1	7/13/2010	135.4	2.131618664	4.0%	
	Field Rep	111.9	2.048830087		
MRN3	7/13/2010	74.9	1.874481818	3.1%	
	Lab Dup	85.7	1.932980822		
Group C					
MRN2	8/12/2010	307.6	2.487986331	7.8%	
	Field Rep	488.4	2.688775655		
USN1	8/12/2010	21.3	1.328379603	16.4%	
	Lab Dup	13.4	1.127104798		
Group C					
MRN3	9/15/2010	187.2	2.272305844	1.7%	
	Field Rep	204.6	2.310905629		
USN1	9/15/2010	2.0	0.301029996	48.0%	
	Lab Dup	3.1	0.491361694		

Split Sample QC								
	7/19/2010							
HQC (MRH13)	30							
MRH13 (Holyoke)	13							
GQC (FRH1)	547.5							
FRH1 (Holyoke)	178							
GQC (FRH7)	307.6							
FRH7 (Holyoke)	123							
GQC (FRH9)	172							
FRH9 (Holyoke)	119							
		Log10 transformed result			**RPD Log10**			
	CRWC		Holyoke					
FRH1	547.5	2.738384	178	2.25042	0.195624	19.50%		
FRH7	307.6	2.487986	123	2.089905	0.173915	14.40%		
FRH9	172	2.235528	119	2.075547	0.074219	7.40%		
10/12/2010								
	Blank	FRH1	FRH2	FRH5	Method			
CRWC		461.1	2419.6	93.3	Colilert			
Holyoke WWTP	0	255	835	84	E. coli Enumeration via m-TEC, EPA 1603			
Greenfield WWTP	0	300	2533	73.3	E. coli Enumeration via m-TEC, EPA 1603			
7/19/2010		FRH1	FRH7	FRH9				
CRWC		547.5	307.6	119	Colilert			
Holyoke WWTP		178	123	172	E. coli Enumeration via m-TEC, EPA 1603			

Tributary Sites				
Holyoke WWTP QC - Field Duplicates				
QC and relevant site:	Date	Result	Log10 transformed result	RPD Log10
SBSH5	6/21/2010	40	1.60206	42.0%
		284	2.453318	
FRH1	6/25/2010	288	2.459392	5.4%
		394	2.595496	
MRS3	6/28/2010	382	2.582063	18.4%
		140	2.146128	
SBSH4	7/12/2010	519	2.715167	31.0%
		97	1.986772	
MRH13	7/19/2010	13	1.113943	28.0%
		30	1.477121	
WBH3	8/2/2010	138	2.139879	0.4%
		135	2.130334	
FRH7	8/9/2010	128	2.10721	4.6%
		103	2.012837	

Main Stem Sites				
Holyoke WWTP QC		Field Duplicates		
QC and relevant site:	Date	Result	Log10 transformed result	RPD Log10
MAH1	6/2/2010	5	0.69897	61.67%
		21	1.322219	
MAH2	6/9/2010	98	1.991226	2.10%
		108	2.033424	
MAC1	6/16/2010	141	2.149219	0.73%
		136	2.133539	
MAC2	6/23/2010	220	2.342423	8.04%
		145	2.161368	
MAC3	6/30/2010	202	2.305351	4.25%
		162	2.209515	
MAH3	7/7/2010	41	1.612784	14.27%
		25	1.39794	
MAC4	7/14/2010	64	1.80618	5.12%
		52	1.716003	
MRH13	7/19/2010	30	1.477121	28.03%
		13	1.113943	
MAH4	7/21/2010	13	1.113943	3.17%
		12	1.079181	
MAG4	7/28/2010	11	1.041393	3.56%

		12	1.079181	
MAH1	8/4/2010	22	1.342423	5.26%
		26	1.414973	
MAH2	8/11/2010	93	1.968483	0.70%
		96	1.982271	
MAC1	8/18/2010	41	1.612784	7.61%
		55	1.740363	
MAC2	8/25/2010	77	1.886491	0.30%
		76	1.880814	
MAC3	9/1/2010	31	1.491362	3.01%
		28	1.447158	
MAH3	9/8/2010	50	1.69897	2.86%
		56	1.748188	
MAC4	9/15/2010	41	1.612784	1.88%
		44	1.643453	
MAH4	9/22/2010	7	0.845098	8.25%
		6	0.778151	
MAG4	9/29/2010	171	2.232996	4.78%
		220	2.342423	
MAH1	10/6/2010	28	1.447158	25.14%
		73	1.863323	

APPENDIX F

Quality Assurance Project Plan

QUALITY ASSURANCE PROJECT PLAN (QAPP) Version 1.0

FOR

AMERICAN RECOVERY AND REINVESTMENT ACT
Connecticut River Water Quality Monitoring Project 2009-13/ARRA 604

EPA RFA # 10099

Pioneer Valley Planning Commission

Jerry Schoen, UMass Water Resources Research Center: preparer

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

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FIGURES

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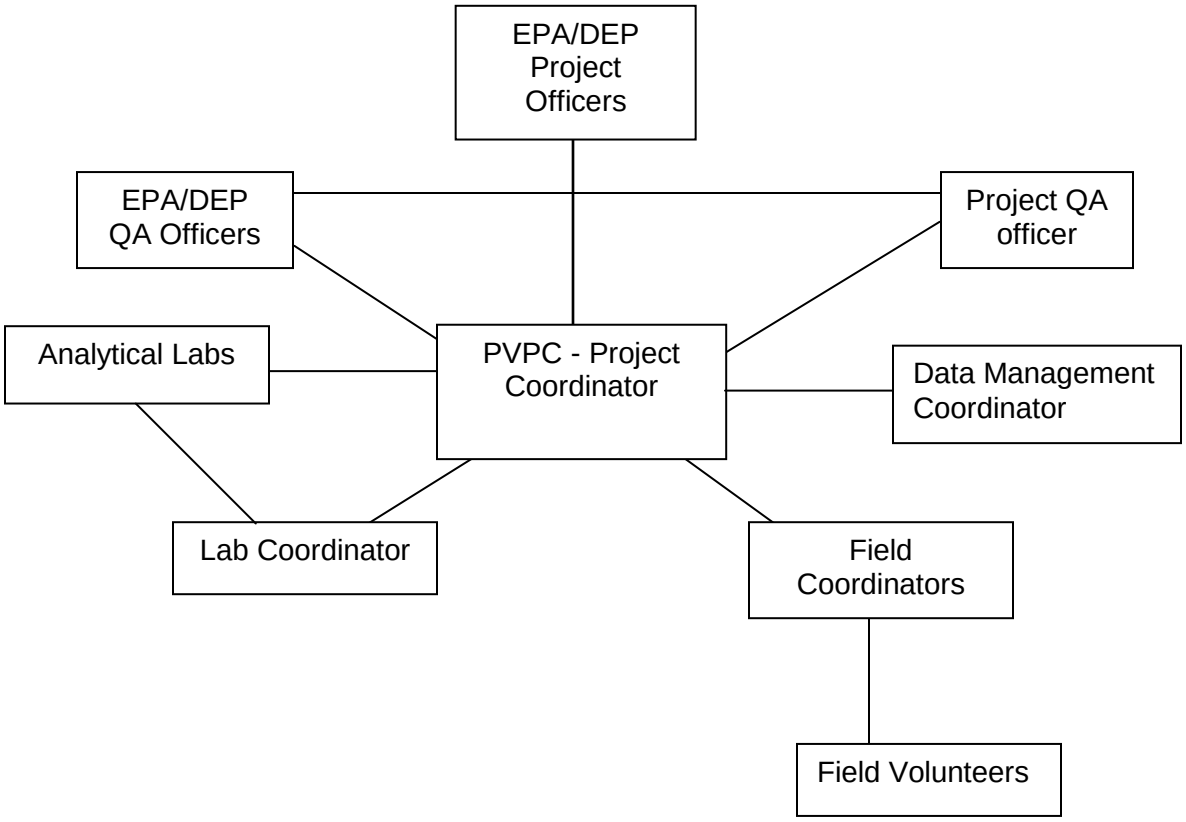
Table 1: Key Project Personnel

Name(s)	Project Title	Description of Responsibilities
Anne Capra, PVPC	Project Coordinator	Oversee all aspects of project that incorporate the monitoring program including: fiscal management, project objectives, reporting, data use, program changes, etc. Coordinate scheduling of sampling events. Produce monitoring reports. Produce or oversee outreach efforts.
MaryJo Moubry Feuerbach, US EPA	EPA Project Officer	Oversee grant administration and ensure reporting requirements are met.
Gary Gonyea, Mass DEP	DEP Project Officer	Oversee grant administration and ensure reporting requirements are met.
Patty Gambarini, PVPC	Project QA Officer	Run QA/QC program, ensure that all elements of the project follow QA procedures in the QAPP. Observe volunteers, review and maintain copies of data sheets and QC records, review draft reports, conduct program review in concert with Project Coordinator, recommend program changes if needed to ensure compliance with program goals and quality objectives.
Jerry Schoen, WRRC	Training, QAPP Coordinator	Volunteer recruitment and training. Develop QAPP.
Anne Capra	Lab Coordinator	Make arrangements with labs used to perform analyses according to QAPP; Ensure correct procedures are used, holding times are met, and adequate documentation is provided.
Anne Capra (southern reach) Andrea Donlon (northern reach)	Field Coordinator	Responsible for training and supervising volunteers in field work; ensures field forms are properly filled out, samples and forms are transported to laboratories as needed; and performs QC checks to make sure procedures are followed or corrected as needed (in collaboration with project QC officer).
Anne Capra	Data Management Coordinator	Maintain program data systems, perform/oversee data entry, check entries for accuracy against field and lab forms.
TBD	Volunteers	Conduct sampling, transport samples to lab. Assist as requested in data entry, outreach efforts.
John Smaldone	EPA QA Officer	Review QAPP, read QA reports, confer with program QA officer on quality control issues that arise during the course of a monitoring program.

Name(s)	Project Title	Description of Responsibilities
Richard Chase, MassDEP	DEP QA Officer	Review QAPP, read QA reports, confer with program QA officer on quality control issues that arise during the course of a monitoring program.
Andrea Donlon	CRWC lab director	Conduct bacteria field and QC sample analyses, report results to Project Coordinator, prepare sample containers for field samplers.
Val Partyka 534-2222	United Water lab director (for city of Holyoke)	Conduct bacteria field and QC sample analyses, report results to Project Coordinator, prepare sample containers for field samplers.

Figure 1: Project Organization



5. Problem Definition / Background

Problem Statement

The Connecticut River has been described as “our Boston Harbor”, because the river still has significant water quality problems, particularly combined sewer overflows (CSOs), which prevent the river from achieving federal and State Class B fishable/swimmable water quality standards in some segments. Similar to Boston Harbor, cleanup costs are very high (e.g. estimated at $325 million for CSOs in Springfield, Chicopee, and Holyoke Massachusetts alone), but the benefits of cleaner water will be also be enormous due to the popularity of the river for recreation and riverfront economic development. According to the USGS, bacteria levels in the Connecticut River are among the highest found in southern New England rivers. From the Holyoke Dam south to Connecticut, water quality standards are not supported (for primary contact), due to pathogens and suspended solids, primarily from urban runoff and combined sewer overflows. This is an environmental justice issue, as many low-income residents in the Holyoke-Springfield reach use the river for fishing and swimming.

The Connecticut River is not meeting Class B, fishable/swimmable standards in many urbanized areas, due to elevated bacterial levels from CSOs and urban stormwater. Limited information is available to the public on whether the river is safe for water-based recreation at any given location or time. Water quality sampling recently undertaken by the firm of Metcalf and Eddy for the Connecticut River Clean-up Committee in the Holyoke-Springfield, MA reach of the river showed geometric mean e-coli bacteria levels during wet weather events of 7480 colony forming units in Holyoke, 1800 in Chicopee and 1267 in Springfield, well above the water quality upper limit of 126 colonies/100ml indicating impaired river water and failure to meet water quality standards for recreational uses. Sampling conducted in 2008 and 2009 for the Rapid Response Water Quality Monitoring and Public Awareness project of the Connecticut River Tri-State Targeted Watershed Initiative(TWI) revealed wet weather geometric means of 134 E. coli colonines/100ml in wet weather vs. 32 colonies in dry weather for the northern Massachusetts reach (Northfield to Hatfield) and 377 colonies in wet weather vs. 86 colonies in dry weather for the southern Massachusetts reach (South Hadley to Longmeadow). These numbers compare to geometric means of 88 colonies (wet weather) and 24 colonies (dry weather) generated by monitoring conducted in the Vermont/New Hampshire river reaches for the TWI. See “Rapid Response Water Quality Monitoring and Public Awareness Final Report” (UMass WRRC 2010) for details.

A consortium of organizations, led by the Pioneer Valley Planning Commission, applied for and received a 604B Water Quality Management and Planning grant in 2009. The 604B project will continue the TWI volunteer based bacteria monitoring program in the Connecticut River watershed in Franklin, Hampshire and Hampden Counties. The project involves the collection of on-going monitoring of bacteria levels along the main stem of the river, new collection of baseline bacteria data on tributaries suspected to be sources of bacteria but for which little or no data exists to document the problem, and will perform new monitoring and field reconnaissance at specific locations for bacteria source tracking. Data collected will be shared with the public, DEP, municipal officials, and other stakeholders

through posting the data to an established web site targeting recreational river users as well as outreach through local media and forum outlets.

Watershed Background

The Connecticut River is New England's longest river, running 410 miles from the Canadian border through New Hampshire, Vermont, Massachusetts and Connecticut to Long Island Sound. The Connecticut River has been designated an American Heritage River. The watershed encompasses 11,260 square miles, with 148 tributaries, including 38 major rivers and numerous lakes and ponds. In its first 271 miles, the Connecticut River forms the New Hampshire – Vermont border. The watershed encompasses a full third (33 percent, 93 towns) of New Hampshire's land mass, and even more (41 percent, 114 towns) of Vermont. Fifty-three communities in these states claim the Connecticut River as a boundary.

Long a migration corridor for commerce, waterfowl, and culture, the river remains a living thread that binds together the people of both these states in one valley. Twenty four major tributaries and countless smaller ones drain a third of New Hampshire and two-fifths of Vermont, through the bed of a former glacial lake whose mark remains on the landscape to this day. Citizens of the Connecticut River Valley are well aware of the asset they now enjoy. The Connecticut commands respect when it releases its ice in the spring, when it floods after a storm, and when it turns turbines day after day to produce electricity for millions of people. Fertilizing its floodplain over thousands of years, the river's valley is home to some of the richest agricultural soils on the continent. Its waters, woods, and wetlands provide nationally recognized fish and wildlife habitat, including anadromous shad, Atlantic salmon and endangered shortnose sturgeon. It draws people to fish and canoe, and to explore the historic heritage of its nearby villages.

The Connecticut River valley is home to about 2 million residents, and about 84 % live in or near urban areas such as Holyoke and Springfield, Massachusetts. The watershed also includes New England's most productive farmlands, a vital waterfowl migration route along the Atlantic flyway, and habitat for fish.

Water Quality History

According to the MA DEP *Connecticut River Watershed 2003 Water Quality Assessment Report*, the status of the *Primary* and *Secondary Contact Recreational Uses* in the Connecticut River Basin are as follows:

Primary Contact Use Summary – Rivers	***Secondary Contact Use Summary – Rivers***
58.6 river miles impaired	166.7 river miles supported
116.6 river miles supported	8.5 river miles impaired
90.1 river miles not assessed	90.1 river miles not assessed

According to the "Massachusetts Year 2008 Integrated List of Waters" the following categories and water bodies/reaches are listed in the project study area in Massachusetts:

Category 3:" No uses assessed": Mill River Headwaters, outlet Factory Hollow Pond, Amherst to inlet Lake Warner, Hadley. 5.2 miles

Category 4c "Impairment not caused by a pollutant":
Lake Warner Hadley; Nutrients, Organic enrichment/Low DO, Noxious aquatic plants, Turbidity, Exotic species.

Category 5: "Waters requiring a TMDL":
Connecticut River

- Segment MA34-01. New Hampshire/Vermont/Massachusetts state line to Route 10 bridge, Northfield. 3.5 miles; Priority organics, Flow alteration, Other habitat alterations
- Segment MA34-02. Route 10 bridge, Northfield to Turners Falls Dam, Gill/Montague. 11.3 miles; Priority organics, Flow alteration, Other habitat alterations
- Segment MA34-03Turners Falls Dam, Gil/Montague to confluence with Deerfield River, Greenfield/Montague/Deerfield. 3.6 miles. Priority organics, Flow alteration, Suspended solids
- Segment MA34-04Confluence with Deerfield River, Greenfield/Montague/Deerfield to Holyoke Dam, Holyoke/South Hadley. 34.1 miles. Priority organics, Pathogens
- Segment MA34-05Holyoke Dam, Holyoke/South Hadley to Connecticut state line, Longmeadow/Agawam. 15.4 miles. Priority organics, Pathogens, Suspended solids

The *Primary* and *Secondary Contact Recreational Use*s are assessed for several segments in the Connecticut River Basin in the 2003 report. Multiple combined sewer overflows (CSOs) currently discharge to the Connecticut River between the Holyoke Dam, Holyoke/South Hadley and the Connecticut state line, Longmeadow/Agawam. The large volume and number of CSOs contributing pathogens in untreated combined sewage to this segment of the Connecticut River impairs the *Primary Contact Recreational Use* for the entire 15.9 miles.

CT River segment	Primary Contact use	Secondary Contact use
MA34-01	Support*	Support*
MA34-02	Support*	Support*
MA34-03	Not assessed	Not assessed
MA34-04	Support	Support
MA34-05	Impaired	Support
Barton Cove	Not assessed	Not assessed

* - indicates segment use is on "alert" status for reasons specified in the water quality assessment description for that segment.

The University of Massachusetts Water Resources Research Center (WRRC), working in collaboration with TWI partners Pioneer Valley Planning Commission (PVPC), Franklin Regional Council Of Governments (FRCOG), and The Connecticut River Joint Commissions (CRJC), designed and conducted a water quality study that involved sampling 16 sites (drawn from a list of 26 sites) twice a week in two urbanized reaches of the river in Massachusetts, Chicopee to Holyoke and Turners Falls to Greenfield; and one rural reach in Vermont, White River to Hartland, during the high-use summer recreation months of 2008 and 2009 (UMass WRRC 2010). All sites sampled are

considered to receive a high degree of use for swimming, boating, fishing and other river recreation. Samples were analyzed at four local wastewater treatment plants.

The TWI study focused only on potential health impacts related to possible disease bearing organisms. The study did not attempt to examine other issues such as nutrient loadings, toxic substances, or other potential problems. The study found that sites in the northern Massachusetts reaches exceeded the Massachusetts single sample primary contact limit of 235 E. coli colonies/100ml in 32% of wet weather samples and 6% of dry weather samples; in the southern Massachusetts reach, the limit was exceeded in 37% of wet weather samples and 13% of dry weather samples.

This project aims to continue the TWI work and also expand sampling to some tributaries of the Connecticut River that have known or suspected bacteria problems.

Intended data users

Stakeholders for this project include residents, visitors to, and recreational users of the Connecticut River Watershed; municipalities, and state, regional and federal environmental agencies. The data produced in this study will be shared with stakeholders, to aid them in making personal decisions on safe use of the river for recreational purposes; understanding causes and effects of weather, land use and other human activities on water quality; and developing management strategies for preservation/restoration of watershed health. All data that are reported will be compared with Massachusetts surface water quality standards for as applicable (e.g. bacteria data compared with criteria for recreational use).

Intended data uses include:

- To produce data of known and documented quality, in support of state monitoring programs, state water body health assessments (305(b)), Total Maximum Daily Load (TMDL) programs, municipal infrastructure improvements as appropriate, to collect baseline information for waters that are currently not assessed, and to advise local-level decision makers and educate the public on the condition of local waters and habitats.
- Identify sources of bacteria;
- Notify appropriate authorities of the suspected sources(s);
- Recommend appropriate action (e.g. further source tracking work, source removal, immediate clean up) to initiate remediation;
- Document bacteria source tracking conducted within the targeted sub-watersheds.
- Provide recreational river users with water quality bacteria contamination levels for their safety.
- Public education and outreach. By training and engaging volunteers in monitoring, they develop a better understanding of the importance of water resources and are in a better position to encourage their fellow citizens to take an active role in the preservation and restoration of their local water bodies and watersheds.

6. Project Tasks / Description

Objectives:
There are numerous small tributaries to the Connecticut River that are not being monitored by DEP, but are likely sources of bacteria loading. This proposed project is meant to complement DEP's monitoring program by conducting source tracking on water's not monitored by DEP but suspected to be likely contributing sources to the impairment due to their urbanized watersheds or identified parcels with highly threatening land uses.

This monitoring program is intended to:

- Advance improvement of the water quality of rivers and streams in the Connecticut River Watershed that are impaired due to bacterial contamination. Steps towards achieving this goal will be made by locating sources of bacteria contamination within targeted sub-watersheds and recommending appropriate action to initiate remediation.
- Contribute to ongoing and future assessments of whether bacterial contamination impairs the river's ability to support primary and secondary contact recreation.
- Convey this information to local, state and federal agencies and to river users through 'rapid response' analysis and communication.

This project defines 3 tiers of monitoring sites. Tier 1 sites include 9 sites along the main stem of the Connecticut River in Franklin, Hampshire and Hampden Counties, essentially the border with Vermont to the border with Connecticut. These are the same sites recently sampled in the EPA Targeted Watershed Initiative monitoring program.. Tier 2 sites are defined as those selected for initial screening via bacteria sampling. Tier 3 sites are defined as Bacteria Source Tracking (BST) sites that are monitored because results from Tier 2 site sampling suggests contamination in the vicinity. These Tier 3 sites may either be those initially selected as Tier 2 sites, or they may be found at locations not previously identified in Table 6; they will thus be "new" sties to be added to Table 6. This means that some Tier 2 sites may "graduate" to Tier 3 status.

PVPC, CRWC and WRRC will collaborate to recruit, organize and train volunteers to conduct a water quality monitoring program involving *E. coli* and temperature sampling in two Massachusetts reaches of the Connecticut River, including tributaries to be samples. For purposes of this QAPP, reaches are defined by the organizations that are overseeing sampling efforts. These are roughly, but not uniformly delineated by geography, and for convenience's sake, are referred to as the northern and southern reaches:

Southern reach:

All Tier 2 and 3 sites in the Mill River (Hadley), Fort River, Manhan River, Stony Brook, Buttery Brook, Willamansett Brook, Scantic River, and Mill River (Springfield). Sampling is coordinated by PVPC. In addition, PVPC will coordinate sampling of all Tier 1 sites on the main stem of the Connecticut River.

Northern Reach:

All Tier 2 and 3 sites in the Mill River (Northampton), Connecticut River in the vicinity of Barton Cove, Maple Brook, Bloody Brook, Sugarloaf Brook, and unnamed stream near Elwell Island, Northampton. Sampling is coordinated by CRWC.

Figures 2-4 show location of *E. coli sampling sites.* Figure 2 contains some of the northern sites; figure 3 contains both northern and southern sites; figure 4 contains the remainder of the southern sites.

Sampling activities will occur from late May (i.e. Memorial Day weekend) through October 2010 , and from late May through June 2011. Sampling sites are broken out into three tiers: Tier 1, Tier 2, and Tier 3 sites. Samples will be collected at Tier 1 sites one day per week for bacteria analysis. These sites are recreational access sites (boat ramps and marinas) on the river where primary and secondary contact with the river is highly probable. Monitoring these sites is important to provide data about bacteria levels on the main stem, which can be used over the long-term to assess the health of the Connecticut River relative to CSO abatement projects.

Tiers 2 and 3 monitoring sites will be on tributaries to the main stem that are suspected to be contributing bacteria loading to the main stem based on the land uses within the watershed and /or documented water quality impairments. These tributaries were identified based on the bacteria levels at the main stem sites, guidance from the project Advisory Committee and DEP (WERO and DWM) and also in part based upon the results of the 2009 bacteria monitoring under the current EPA funded TWI project and monitoring performed by DEP during the 2009 season. Most of the Tier 2 tributary sites are water bodies where little or no data about bacteria has been collected in the past and thus baseline bacteria data is of great importance. Up to 30 Tier 2 sites on tributaries along the entire main stem of the Connecticut River in Massachusetts will be monitored at least three times per site, no less than one week apart in time per site, over a 6 month period for bacteria “screening level” sampling. Tier 3 monitoring sites will be identified specifically for bacteria source tracking along those Tier 2 tributaries where bacteria screening results indicate bacteria levels in excess of secondary contact standards for *E. coli*. Tier 3 monitoring sites may include pipe discharges or in-stream grab samples. Up to 20 Tier 3 monitoring sites will be sampled once or more per month for six months.

See Table 6 for a list of candidate Tier 2 and Tier 3 tributary sites.

All Tier 1 samples will be analyzed for e. coli bacteria at the municipal wastewater treatment plant lab in Holyoke (operated by Suez/United Water); all Tier 2 and 3 sites will be analyzed at CRWC’s lab in Greenfield. CRWC’s lab will analyze up to 500 samples for E. coli using the Colilert system, from Standard Methods 9223B. Holyoke’s lab will analyze up to 700 samples for E. coli utilizing EPA SOP 1603 for membrane filtration.

Participating laboratories will send electronic copies of sampling results to WRRC immediately upon completion of sample analyses. WRRC will post draft water quality data on the project web site within one day of completion of laboratory analyses.

Optical brightener testing is a way of determining whether or not laundry detergents are entering a water body-either through a direct discharge or after traveling through the ground from a septic system that may be functioning poorly. Optical brightener testing can be used as a screening tool to separate areas with elevated bacterial counts due to inputs from human sources (septic systems or cross connections) as opposed to

domestic animals, pastured animals or wildlife. Human from animal waste sources can be screened using OB by deploying the test pads in storm drains or small feeder streams.

Besides laundry detergents some other materials may also cause positive results. These include metal particles, bleached materials, cotton dust, or paper products. It is important that the unbleached cotton pads are not exposed to these contaminants via aerial deposition or by physical contact-such as placing the pad down on paper, particularly if either is wet, which allows the optical brighteners to leach out.

Optical Brighteners: dry weather flows at piped outfalls may be field screened for optical brighteners (OBs). A tentative list is provided in table 6.1, but specific sites are to be determined via prior field inspection, and during Tier 3 sampling. Optical brightener sampling will occur at least once per site selected.

PVPC will coordinate communication between all program participants and will oversee quality control operations.

Table 2: Anticipated Schedule.

Activities occur in 2010 and 2011 except where indicated.

Activity	J	F	M	A	M	J	J	A	S	O	N	D
Develop draft QAPP (2010 only)	X	X	X	X								
Finalize QAPP (2010 only)			X	X								
Site Selection	X	X	X	X								
Recruit volunteers			X	X	X							
Equipment inventory, purchase, inspection, and testing			X	X	X					X		
Field training and database-related training session(s)				X	X							
Coordinate/planning with analytical laboratories*		X	X	X	X	X	X	X	X	X		
Conduct Sampling *					X	X	X	X	X	X		
Data entry*					X	X	X	X	X	X		
Data review and validation*					X	X	X	X	X	X	X	X
Outreach (post data, project info on web site, etc.)*	X	X	X	X	X	X	X	X	X	X	X	X
Field audit(s)*					X	X	X	X	X	X		
Lab audit(s)*					X	X	X	X	X	X		
Draft report (2010)										X	X	X
Final report (2011)							X	X				
Data uploads to website *					X	X	X	X	X	X	X	X

* 2011 activities end in June

7. Measurement Quality Objectives

The quality objectives for the data collected under this QAPP are to produce data of sufficient quality to be acceptable by intended data users listed in section 5. Quality objectives are discussed for precision, accuracy, representativeness, completeness, and comparability.

Table 3: Measurement Quality Goals

Unless otherwise specified, samples are taken from water column.

Parameter	Units	Accuracy	Precision	Min. Detect. Limit	Expected Range
Optical Brighteners	Qualitative: negative positive, inconclusive	Weakly positive (inconclusive) or non-detect results for blank control pads	Duplicate results within 1 qualitative unit.	NA	Negative through positive
Temperature	^{0}C	$\pm$0.5 in comparison to NIST-traceable thermometer	$\pm$ 1	NA	0 – 35
E. coli	CFUs/ 100 ml for EPA 1603 MPN/ 100 mls (Colilert method)	Blanks and negatives show no colonies, positives show colonies	30% Relative Percent Difference for log 10 transformed duplicate data	0 for United Water (EPA 1603 modification): 1 MPN for CRWC (Colilert)	0 – 100,000
Location by coordinates (GPS)	degrees and decimal minutes (NAD 1983)	+/- 50 feet	Repeated readings, record during maximum satellite coverage	1 foot	NA

See section 14 for a discussion of how accuracy and precision goals are evaluated.

Table 4: Representativeness

Sampling site descriptions are given in section 10.

Indicator	Sample Site considerations	Rationale	Sample schedule
Optical Brighteners	Dry weather flows at piped outfalls	These locations and conditions optimal for detecting presence of human-source flows (i.e. septic systems or cross connections)	To be determined. At least once at each site selected for monitoring.
E. coli, temperature	Access/recreation locations, above and below suspected contamination sources, tributary mouths	Heavily used & previously monitored sites, high degree of water contact expected (Tier 1); locate pollution sources (Tiers 2 and 3)	Tier 1: 1/week, May – Oct. Tier 2: 2/mnth May – Oct. Tier 3: 1/mnth May – Oct. (May – June 2011 for all tiers).

Representativeness of the samples collected is considered in 3 ways: site selection, timing and frequency of sample collection.

Site selection process involves:

- Tier 1: identifying representative locations where humans are most likely to come into contact with the water for recreational purposes (i.e. as they are putting in and taking out boats from the Connecticut River), and therefore of conditions that are most likely to present health concerns. These sites were first selected for inclusion in the TWI monitoring program.
- Tiers 2 and 3: bracketing suspect bacterial pollution sources. In cases where there are no initial known/suspected sources, site selection is done by identifying access points (e.g. road crossings, recreation access) spaced throughout a tributary watershed, starting from accessible sites closest to the stream mouth and working upstream.
- Optical Brighteners: PVPC and CRWC staff review locations of known piped outfalls (or those discovered during E. coli monitoring activities), determine which to target for Optical Brightener monitoring. A tentative initial list is found in table 6.1.

Timing of sample collection took several factors into account. Memorial Day through Labor Day is considered the period of highest recreational use of the Connecticut River. For Tier 1 sampling, one sample per week over the course of the project will produce up to 30 or more samples per site. It is anticipated that this will produce both wet and dry weather samples. For tier 2 and 3 sampling, dry weather sampling is preferred, because bacteria sources are easier to identify in these conditions: there is less chance of dilution by storm flows, or of contamination by diffuse nonpoint sources. Tier 2 and 3 sites may be sampled as few as 2 or 3 times per site; upper limit of samples per site to be determined by BPJ of CRWC and PVPC staff. If high bacteria counts are found at a given site, this site is flagged as an impact site. In such cases, subsequent sampling may occur at sites further upstream, in order to better locate the source of contamination. If a site does not initially display high bacteria counts, it will be sampled at least twice more to confirm that low readings were not anomalous.

Comparability
The comparability of the data collected will be insured by using known protocols and documenting methods, sampling sites, sampling times and dates so that future surveys can produce comparable data by following similar procedures. Comparability of analysis results from the two different analysis methods and laboratories used (see section 6 above and 10 and 14 below) will be evaluated by splitting field samples and sending them to the two different laboratories for analysis as described in section 14.

Completeness
Completeness is the amount of valid data obtained compared to the amount of data planned.

At least 80% of the anticipated number of samples in each tributary will be collected, analyzed and determined to meet data quality objectives for the project to be considered fully successful.

A report detailing the number of anticipated samples, number of valid results, and percent completion (number of valid samples/number of anticipated samples) will be produced.

8. Training Requirements / Certification

Optical Brightener sampling will be conducted by PVPC and/or CRWC staff. Staff will be self-trained, using SOPs adapted from MassDEP's Optical Brightener SOP (CN 58.0) and the Optical Brightener Handbook published by Eight Towns and the Bay as guides. Jerry Schoen of the Massachusetts WRRC will train volunteers in bacteria sample collection techniques. Mr. Schoen has more than a dozen years experience training volunteer water quality monitors in these techniques. One training session each will be held in May 2010 and again in May 2011 in the southern and northern reaches, for a total of 4 training sessions. Specific locations to be determined for the Turners Falls / Sunderland area and the Springfield/Chicopee Holyoke area. PVPC and CRWC staff will attend the trainings held in the reach each coordinates.

Volunteers will be trained on sampling method, sample handling and transport, documentation (i.e. completing field sheets and chain of custody forms) and in project communication methods (e.g. how /where to obtain information on sampling schedules, rules for notifying project coordinators of planned/unplanned absence from sampling responsibilities etc.) Any volunteers involved in data entry will receive individual or group training on a schedule to be determined.

If any new volunteers join program after the training sessions occur, PVPC and CRWC will train these individuals, according to the respective reach the volunteer(s) agree to monitor. Records of training dates and who received training will be kept at the MassWWP office. Records will contain the following information: subject matter (i.e. what type of monitoring and procedures are covered), training course title, type of training materials, date and agenda, name and qualification of trainers, and names of participants trained. Sample training records are found in the appendices.

9. Documentation and Records

Field data sheets for water quality monitoring will be completely filled out on site and signed by the volunteers taking the samples at the time of the sampling event. This sheet will include the date and time the sample was collected, the site location number, the names of the volunteer samplers, current and previous weather conditions, water conditions, and water quality data collected at the site. Sample field sheets are found in the appendices.

Sample labels will be put on all sample containers and will include the site name, date, time, location, type of sample, and sampler's name. Labels for sample bottles are shown in the appendices.

Chain of custody (COC) forms will accompany samples from collection sites to laboratories. COC forms will be signed by collectors and all individuals who gain custody of the samples until they arrive at the lab. Information will agree with the label information on the sample bottles. Information such as the ID number, date, time, type of sample, and samplers will be included on the chain of custody form. COC form is shown in the appendices.

Project Coordinator fills out QC-Site reconciliation sheet and gives to field samplers prior to sampling events. This may be done on a weekly to monthly basis. Field samplers conduct QC activity as noted on the form (i.e. create a trip blank or take field duplicate at assigned site); label sample bottle and enter sample ID in field form according to QC labeling scheme. If departure from QC reconciliation sheet occurs, this must be noted in the comment area of the field sampling form and in the comment area of the QC reconciliation sheet. If this occurs, the field sampler must relay this information to the Project Coordinator via email (failing that, by phone) on the day sampling occurs.

Project Coordinator or Data Coordinator will use QC – site reconciliation data to document QC when lab results are received from each laboratory.

The data from these sheets will be entered into an Excel database. Original data sheets and the excel files will be stored in the PVPC office for no less than five years.

Data will be organized and entered into STORET. Data sheets will contain information necessary to allow data entry personnel to complete all required STORET fields. See section 19 for further information.

Project staff and volunteers may take digital photographs to assist in documentation of sampling site locations, outfalls or dry weather flows of interest, other visible signs of pollution, and other noteworthy phenomena encountered during conduct of this project. Digital photos will be stored on the PVPC computer in appropriately named folders (e.g. identifying sampling sites or a "visible pollution photos" folder). Some photos may be posted on project web site as part of outreach activities.

Miscellaneous records for instrument checks, calibrations, and maintenance will be kept in a logbook.

Training records for all volunteers involved in the project and materials used in the training will be kept.

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Table 5: Data Sheets, Labels, Laboratory and Voucher Forms

Documentation Type	**Form Name**	**How Used?**	**Example in Appendix?**
Sample Collection Records	Bacteria Field sheet	By volunteer samplers to record activities, conditions in field; identify sample.	Yes
	Optical Brightener Field Sheet	By volunteer samplers to record activities, conditions in field; identify sample.	Yes
QC field sample ID	QC - site reconciliation sheet	Project Coordinator and field samplers use to document type (blank or field duplicate) of QC sample and, if duplicate, which site receives duplicate sampling. Labs do not see this form.	Yes
Chain of Custody	COC form	By samplers, individuals transporting samples to lab, lab personnel receiving samples to document sample has been handled/transported in accordance with SOPs.	Yes
Laboratory Records	Analysis report – United Water (Holyoke) laboratory	Record analysis results, document lab activities.	Yes
	Analysis report – CRWC Laboratory	Record analysis results, document lab activities.	Yes
Training Records	Training Record Form	Document training activities, receipt of training by volunteers.	Yes
Photo documentation	NA	Photos are used as supporting documentation for site locations, visible signs of pollution, other noteworthy phenomena that may be encountered during the course of this project.	No

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10. Sampling Process Design

Sampling Safety. Personal safety will be a primary consideration in all activities, including selection of sampling sites and dates, and training programs. Safety procedures will include, but not be limited to:

- No sampling shall occur when personal safety is thought to be compromised.
- The Project / Field Coordinator will consult online weather forecasts in each sampling area before each sampling event to decide whether adverse weather or other conditions pose a threat to safety of field volunteers, and will cancel/postpone sampling when necessary.
- Samplers will wear life vests when sampling from boats or wading in waters under difficult conditions.
- Samplers will wear proper clothing to protect against the elements as applicable, especially footwear and raingear.

Sampling Design Considerations

PVPC will coordinate volunteers who will collect Tier 2 and 3 water quality samples at all sites in the southern reach. These include all tier 2 and 3 sites in the Mill River (Hadley), Fort River, Manhan River, Stony Brook, Buttery Brook, Willamansett Brook, Scantic River, and Mill River (Springfield). In addition, PVPC will oversee sampling of all Tier 1 sites on the main stem of the Connecticut River. CRWC will coordinate volunteers sampling of Tier 2 and 3 sites in the northern reach, on Connecticut River in the vicinity of Barton Cove, Maple Brook, Bloody Brook, Sugarloaf Brook, Mill River (Northampton), and an unnamed stream near Elwell Island, Northampton. Samples will be collected during the high-use summer recreation months (May-October). PVPC and CRWC staff will participate directly in some sampling of Tier 2 and 3 sites. Samples will be collected once per week on the 9 Tier 1 sites. These sites have been identified by PVPC, CRWC and WRRC staff based on water quality and site use history as discussed in section 6. Tier 1 sites are all located on the main stem of the Connecticut River. See Table 6.

PVPC, CRWC and WRRC staff selected tributary streams for Tier 2 and 3 monitoring based on water quality and site use history as discussed in section 6.

Two to four sites from each tributary will serve as the initial sites to be sampled. These are Tier 2 sites. The specific initial sites will be determined prior to the start of sampling in 2010. It is critical for BST to accurately record station locations using detailed descriptions and GPS readings ; often BST site locations differ by only 10-20 feet (e.g., up/down of outfall). General criteria for selecting these are that they are approximately evenly geographically distributed along a tributary, with one site near the mouth, one near headwaters, and at least one approximately mid way between; alternatively, if a tributary possesses sub-tributaries of interest, initial sites may be near the mouths of these tributaries. Subsequent sampling sites will be selected based on the results of sampling at the initial sites, according to the bracketing/ source detection strategy outlined in section 6, pages 12 and 13 and further discussed in the paragraph immediately following this one. These are Tier 3 sites.

Sampling for Tier 2 and 3 sites will occur once or twice per week on dry weather days. The schedule for each week will be established by PVPC and CRWC, considering weather and availability of the CRWC laboratory. For purposes of this project, dry weather is defined as no more than 0.1" rain during the 48 hours previous to sample collection. All Tier 2 will be sampled at least 3 times. Tier 3 sites will be determined based on Tier 2 results, and will be sampled at least once per month for 6 months. Individual sites will not be sampled any closer in time than one week apart. PVPC and CRWC will review results and make a determination as to whether monitoring should continue at a site, be shifted to a new site, or be resumed at a previously sampled site if results warrant. Given that the project objective is to locate bacteria sources, and given a limited budget, efficient use of resources is important. Sites that indicate high bacterial levels on a minimum of 3 consecutive dry sample events will be considered impact sites, and may be replaced by sites further upstream in an attempt to more closely bracket the pollution source. The determination of what constitutes "high bacteria levels" will be made by CRWC and PVPC staff based on best professional judgment and comparison with historical data and/or with other sites on the same stream. An initial general reference level of 1000MPN will be used as a definition of high levels, but this is subject to change as results are obtained and compared. The determination will be made in part on a site's bacterial levels relative to nearby sites. If, for instance, a site registers 500MPN and adjacent sites do not exceed 50 MPN, the site in question would be considered an impact site. Sites with low levels of bacteria will be monitored for at least 3 dates before a decision is made to move to another site. The general strategy for source detection is to begin with fairly uniformly geographically distributed sites within a watershed. Sampling and iterative site selection will proceed on a "control vs. impact" strategy. A site that produces low bacteria levels is considered a control site. Any site that produces high bacteria levels is considered an impact site. Sampling proceeds as described above (i.e. minimum 3 samples per site) with new sites selected to attain widespread geographic coverage, until an impact site is discovered. At that point, new impact and control sites are selected by moving the control site downstream closer the impact site, and/or the impact site upstream closer to the control site. This is done in conjunction with land use analysis conducted via map, driving or walking through watershed to identify visually any potential pollution sources. Project staff in consultation with volunteers will by this iterative process move impact and control sites closer together until a source is located, or until project staff concludes that no further determination is possible using the resources and practices available for this project. The objective is to collect 10 samples per event from Tiers 2 and 3 collectively, subject to practical considerations (i.e. availability of volunteers, staff time at CRWC laboratory).

Tier 1 samples will be analyzed for e. coli bacteria at the municipal wastewater treatment plant lab in Holyoke (operated by Suez/United Water); all Tier 2 and 3 samples will be analyzed at CRWC's lab in Greenfield. CRWC's lab will analyze samples for E. coli using the Colilert system. Holyoke's lab will analyze samples for E. coli utilizing EPA SOP 1603 for membrane filtration. We recognize that these are different methods. However, both are EPA approved. These are the methods that the participating labs currently use. The limited resources available to this project do not allow us to pay either lab (or another lab) to obtain the equipment, supplies and training necessary to adopt another method. Except for the quality control exercises described below, the samples used to identify bacteria sources will only go the CRWC lab, while Tier 1 samples will only go to the Holyoke lab. Thus, the answer to each study question (i.e. for Tier 1 sites, does the river support contact recreation at this site; for Tier 2 and 3 sites, where are the

pollution sources in this tributary) will rely on samples analyzed with a single method. Although these two methods have been found to be comparable in the scientific literature, we will conduct quality control exercises (described in section 14) by splitting samples collected at individual sites and sending them to both labs for comparison.

Optical Brightener sampling: PVPC and CRWC staff will review sampling data and communications with DEP and/or municipal officials to determine if piped outfalls exist where dry weather flows occur. Staff will develop a schedule to sample these locations at least once for presence of optical brighteners, to determine if evidence of detergents on sample pads indicates human sources (e.g. septic system discharges or cross connections). Specific site locations to be determined, sampling will occur during dry weather. A tentative list is found in table 6.1.

Project Coordinator (PVPC staff) will contact CRWC and United Water lab each week to reconfirm sampling schedule for that week and tentative schedule for following week; to determine if each all parties possess adequate supplies of paperwork (e.g. field sheets, labels), sampling equipment/supplies; and that overall system is running smoothly. PVPC will receive data reports from lab, event reports from Field Coordinators after each event. PVPC will communicate as necessary with United Water and CRWC to resolve any problems encountered in a timely manner.

PVPC and CRWC staff will coordinate and oversee sample event preparations in their respective reaches: activities of field samplers, sample transport to laboratories, pre-and post- sampling communication with laboratories. PVPC and CRWC will contact field volunteers each week to establish sample/site schedules, ensure that volunteers (and backups) are ready for each site to be sampled, and that they have all necessary supplies (e.g. coolers, sample containers, ice packs). PVPC and CRWC will generate brief event reports detailing any problems encountered. These will be collected by PVPC after each sample event.

Laboratories will communicate with Field Coordinators in each reach after each sampling event to ensure that samples are delivered to lab in acceptable condition; will analyze samples within required holding times and conduct quality control exercises as described in section 14; will submit analysis results (including QC data) to Project Coordinator via email immediately upon completion of analysis.

Field volunteers will communicate with Field Coordinators each week/sampling event to confirm their participation (or that approved backup has been arranged), which sites are to be sampled, delivery times to labs, and that needed supplies are in hand etc. Volunteers will collect samples at predetermined sites, dates and times, will complete field data and chain of custody forms, will deliver samples to labs, and will deliver paperwork to lab or Field Coordinators as stipulated in sampling plan.

Sampling site list.
Tier 1:
PVPC, CRWC, and WRRC have selected nine water quality sampling sites along the main stem of the Connecticut River as Tier 1 sites, to be sampled once per week. See Table 6.

Tiers 2 and 3:
PVPC, CRWC, and WRRC have selected the following Connecticut River tributaries to focus on. Candidate sites are shown in Table 6.

Site numbering convention: for Tier 1 sites: use same names as those used in TWI sampling program. For Tier 2 and 3 sites: river/stream initials + town (at stream mouth) initials + sequential number. Example: Site MRH1: MR = Mill River; H = Hadley 1 = number of site. Site numbers ascend going south to north. If any sites are added between 2 adjoining sites (e.g. between MRH1 and MRH2), will use a decimal numbering system, using number half way between the two existing sites. E.g. MRH1.5.

Maps of sampling sites may be seen in figures 2-5. Due to the extensive geographic region being sampled, *E. coli* sites are displayed across three maps. Figure 2 shows most of the northern reach sites. Figure 3 includes some of the Mill River Hadley sites, which are considered northern reach sites, and some of the southern reach sites. Figure 4 shows the remainder of the southern reach sites.

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Table 6: Sampling Sites

Site ID	Site Location	Lat	Long	Notes
Tier 1 Sites. Connecticut River. For consistency's sake, site numbers are the same as those used in the Targeted Watershed Initiative sampling program. Sites are listed below south to north. Naming convention refers to state initials and lab conducting analysis in TWI program.				
MAH1	Pioneer Valley Yacht Club, Agawam	42.063513	-72.59329	Boat launch site.
MAH2	Pynchon Point Park, Springfield	42.0833	-72.585449	
MAC1	North End Bridge/Bassett Marina Boat Launch, Springfield	42.1100833	-72.612883	Continuation of monitoring for high E. coli counts at this location and begin upstream source tracking.
MAC2	Davitt Bridge / Granby Rd, Chicopee	42.1504	-72.6069167	Boat launch site. High bacteria counts in TWI sampling.
MAC3	Medina St. Boat Ramp, Chicopee	42.1100833	-72.6253833	Boat launch site. High bacteria counts in TWI sampling.
MAH3	Jones Ferry, Holyoke	42.172379	-72.629898	
MAC4	Berchulski Fisherman Access, South Hadley	42.1945333	-72.59985	Boat launch site. High bacteria counts in TWI sampling.
MAH4	Brunelle's Marina, South Hadley	42.1945333	-72.5996333	Boat launch site.
MAG4	Barton Cove, Gill	42.6015667	-72.5315	River recreation site. High bacteria counts in TWI sampling.
	Storm drain outfalls to be identified in the field			
Tier 2, 3 sites: sampling coordinated by PVPC.				
Fort River, Hadley and Amherst.				
FRH1	Route 47 bridge, Hadley	42.332672	-72.578636	E. coli 240 colonies/100ml 9/3/09, 1500 colonies/100ml 9/9/08, MA DEP
FRH2	Tributary at Moody Bridge Road crossing, west	42.332894	-72.570777	First tributary crossing Moody Bridge Road closest to Bay Road
FRH3	Tributary at Moody Bridge Road crossing, east	42.339813	-72.556641	Tributary crossing Moody Bridge Road near South Maple Street
FRH4	Tributary crossing at Mill Valley Road	42.348866	-72.567433	

FRH5	South Maple Street, Hadley	42.341327	-72.550244	Main stem, next upstream road crossing. Several adjoining tributaries in between Fort 1 and Fort 2 that may need to be sampled.
FRH6	West Street (Rte 116) crossing, Amherst	42.355580	-72.520913	Hickory Ridge Golf Course and agriculture fields in between Fort 2 and Fort 3
FRH7	Bike Path Bridge/Mill Lane and South East Street, Amherst	42.357819	-72.504658	E. coli 460 colonies/100ml 9.9.08, MA DEP
FRH8	Hop Brook at Station Road Crossing, Amherst	42.341972	-72.493527	Major tributary coming from the south
FRH9	Pelham Road, Amherst	42.364227	-72.489891	Origination of Fort River from Hawley Brook, Adams Brook, Heatherstone Brook, Amethyst Brook
Mill River, Hadley and Amherst				
MRH1	Mouth	42.383385	-72.586842	
MRH2	Mill Site Road	42.386286	-72.550385	Near N. Maple St. No other known impacts until it reaches L. Warner
MRH3	N. Hadley Road Horse Farm	42.384511	-72.546587	This drains the Hadley Farm, would provide comparison with main stem of Mill R. coming from UM campus and N. Amherst. However, in high water, there might be some water backing up from main stem, potentially invalidating comparison
MRH4	N. Maple St. Hadley Road Horse Farm - alternate	42.382133	-72.546319	This drains the Hadley Farm, would provide comparison with main stem of Mill R. coming from UM campus and N. Amherst. Avoids high water problem of MRH3. Longer walk – about 100 yds from road. Same location as downstream nutrient site for TWI. , there might be some water backing up from main stem, potentially invalidating comparison
MRH5	N. Hadley Road Main stem Mill River	42.385065	-72.545965	Good comparison with MRH5 (or MRH4).
MRH6	Rt. 116 Horse Farm upstream	42.379137	-72.542574	Immediately upstream of Horse farm. Same location as upstream TWI nutrient site.
If necessary, additional sites may be added on the branch of the Mill that originates in the vicinity of Route 9 on the Amherst/Hadley line.				

MRH8	UMass parking lot Mill River	42.391999	-72.538835	This might prove useful to compare vs. small branch coming out of Campus Pond, Amherst center. Access may be difficult here; check for fencing.
MRH9	UMass parking lot, Campus Pond outlet	42.39127	-72.536899	Possibly useful comparison of Mill R. Vs. campus pond stream.
MRH10	Fearing St, Mill R. Amherst Center branch	42.382634	-72.523174	Last spot before stream goes underground. Collects Amherst center runoff. This would Bracket UMass campus with site MRH9
MRH11	Meadow St, Mill R. "northwest"	42.408027	,-72.539656	Captures a branch of Mill R. coming from NW, Hadley/Sunderland. Compare with site MRH12
MRH12	Meadow St, Mill R. east	42.408684	-72.538605	Just a few yards from site MRH11; this drains the Mill River from Shutesbury down, just before confluence with Mill R. NW (site MRH11).
MRH13	Mill R. Recreation area. Mill River	42.411504	-72.527887	Just below Puffers Pond, N. Amherst
MRH14	State St, Cushman Brook	42.415833	-72.514095	Above Puffers Pond. Mill River is named Cushman Brook above Puffers. For consistency's sake, naming convention continues from downstream sites.
MHR15	Teewaddle Hill, Cushman Bk. trib	42.43642	-72.492862	A branch of Cushman Bk. In N. Amherst near Leverett line. Might be access permission issues.
MRH16	Teewaddle Hill, Cushman Brook	42.43623	-72.492342	Just a few yards from site MRH15. Main stem of Cushman Brook. Might be access permission issues.
MRH17	Cushman Road, Cushman Brook	42.438483	-72.482724	100-200 yards upstream of site MRH16. If access or other problems with MRH16, use this instead.
MRH18	Broad Hill Road Shutesbury . Cushman brook	42.447698	-72.464753	1+ miles upstream from site MRH17. use this and other upstream sites if problems are found at MRH17.
MRH19	Leverett Road Shutesbury. Cushman Brook	42.449579	-72.452205	Further up on Cushman Brook.
Manhan River, Easthampton				
MRE1	Fort Hill Road, Easthampton	42.284091	-72.640880	E. coli 300colonies/100ml 7/1/08, 940 9/9/09, MA DEP
MRE 2	O'Neill Street/Lovefield Street crossing	42.279761	-72.654266	

MRE3	Lower Mill Pond outfall at Ferry Street crossing	42.275797	-72.654725	
MRE4	Route 10 crossing and Mill Street	42.273838	-72.673013	
MRE5	Bassett's Brook at West Street	42.273344	-72.675411	
MRE6	Glendale Road crossing	42.266552	-72.691225	Upstream of Hannum Brook intersection (Northampton Landfill on this brook)
Stony Brook, South Hadley				
SBSH1	Ferry Street at Brunelle's Marina, before CT River	42.263138	-72.598919	
SBSH2	Rte 116 by Chapdelaine Furniture	42.248222	-72.580097	6/09-9/09 312-950 cfu/100ml E. coli, South Hadley DPW
SBSH3	Leaping Well Brook at Mosier Street	42.245022	-72.579327	
SBSH4	At Morgan Street, south of Lower Pond	42.252252	-72.573430	
SBSH5	Morgan Street, east of Edison Drive and west of Mary Lyon Drive	42.251216	-72.559294	
Buttery Brook, South Hadley				
BBSH1	Brainerd Street and Lathrop Street	42.238627	-72.593477	
BBSH2	Newton Street at Rte 202 interchange	42.223536	-72.589877	
Willamansett Brook, Chicopee				
WBH1	Upstream side of Yelle Street	42.191149	-72.598733	9/9/08 20,000CFU/100ml E. coli, MA DEP
WBH2	Route 33 and east end Robert's Pond	42.194480	-72.583547	
Scantic River, Hampden				
SRH1	Mill Road	42.048477	-72.453744	9/9/08 3600 cfu/100ml E. Coli, MA DEP
SRH2	Somers Road crossing, north of intersection with Mill Road	42.054766	-72.439141	
SRH3	West Brook at Main Street, next	42.063713	-72.418577	

	to Colonial Village			
SRH4	At Chapin Road and South Road intersection	42.063363	-72.413208	
SRH5	Big Brook at Main Street	42.064430	-72.408744	
SRH6	At Rock-A-Dundee Road	42.047369	-72.383108	
Mill River, Springfield				
between Johnny Appleseed Park (near Hancock Street/Rifle Street Intersection) and the Watershops Ponds Dam (Allen Street)				This segment formerly received the vast percentage of CSO/DWO into the Mill River (over 55 million gallons/year , activating over 80 times/year) from CSO #048 (Allen and Rifle Street). This CSO was abated to discharge 4 times or less per year (Actual frequency of discharges now under analysis). Bacteria analysis in this stream segment during dry weather and wet weather may help evaluating the effectiveness of the CSO 048 abatement.
MRS1	Allen Street and Rifle Street, south of Watershops Pond Dam	42.097019	-72.563788	
MRS2	Hancock Street and Rifle Street	42.094152	-72.567808	
Tier 2, 3 sites: sampling coordinated by CRWC.				
Barton Cove of Connecticut River, Gill and Montague				
CTRG1	Franklin County Boat Club docks, Gill side	42.607748	-72.543065	Use most downstream dock. CRWC has gotten permission to sample here in the past. Close to state boat ramp site with 350w, 2133, and 1133 cfu/100 mL during 2009 Targeted Watershed Initiative sampling season
CTRG2	Boat dock at FirstLight Barton Cove campground access road, Gill side	42.604369	-72.532665	
CTRG3	Unity Park furthest upstream end, Montague side	42.604406	-72.547336	Used for kayak demo day access point and swimming spot
CTRG4	Unity Park parking area, Montague side	42.606438	-72.549529	Swimming spot

Maple Brook, Greenfield				
MBG1	Accessible location near where Maple Brook daylights, off Conway St.	42.587531	-72.612619	Maple Brook is underground except for a short section at mouth. This brook has a history of cross-connections and bacteria problems. Tier 2 will be at mouth. Tier 3 will involve consultation with Greenfield DPW to pull manhole covers.
Bloody Brook, Deerfield				
BBD1	Whately Rd. along N-S-running road segment	42.478334	-72.618996	960 cfu/100ml by DEP in 9/9/08. Bloody Brook crosses Whately Rd in two locations.
BBD2	Conway Street	42.482681	-72.615137	Branch of stream
BBD3	Routes 5 & 10	42.479972	-72.613091	
BBD4	Pleasant St. near North Main St.	42.481651	-72.605167	
BBD5	Capt. Lathrop Dr.	42.488248	-72.604735	
Sugarloaf Brook, Deerfield and Whately				
				Check to see if there is an accessible spot at Herlihy Park, Whately closer to mouth
SBW1	River Rd. N, Whately	42.465992	-72.592425	No previous data on this water body.
SBW2	Route 116, Deerfield	42.467238	-72.602341	
SBW3	Thayer St., Deerfield	42.472697	-72.610025	
SBW4	Sugarloaf St., NE side, Deerfield	42.476562	-72.607066	
SBW5	Graves St., Deerfield	42.477645	-72.603032	
Unnamed Stream near Elwell Island, Northampton				
USN1	Near bike trail bridge off Norwottuck parking lot	42.335645	-72.621547	Nothing known about this tributary which is mostly underground. Before they were laid off, DEP bacteria source tracking team recommended checking it out.
Mill River, Northampton				
MRN1	Clement Street bridge crossing	42.319154	-72.664981	DEP site 28B had 2,900 and 2,500 cfu/100 mL by DEP on 9/9/08 but was 12.1 on 4/27/09. Park at road site next to USGS gage. Sample downstream side of bridge.

MRN2	Bliss St. bridge crossing	42.329152	-72.675203	Park at end of Cross St. Sample at upstream side of bridge. Confirm DEP low count of 9.4 on 4/27/09. DEP site MRCTNH 7.0.
MRN3	Meadow St. bridge crossing	42.334194	-72.677477	Park at end of farm road at upstream side of bridge. Sample at upstream side of bridge. DEP low count 4/27/09.
MRN3.1	Meadow St. pipe outfall	42.334039	-72.677372	7,701 cfu/100 mL by DEP on 4/27/09. Pipe outfall immediately downstream of Meadow Street Bridge, left bank, park at farm road next to bridge.

Table 6 continued. Optical Brightener sampling sites. Tentative

Mill River, Springfield				
Between Johnny Appleseed Park (near Hancock Street/Rifle Street Intersection) and the Watershops Ponds Dam (Allen Street)				
MRS1	Allen Street and Rifle Street, south of Watershops Pond Dam	42.097019 OR: 42.09706111111112	-72.563788 Or: -72.56329166666666	Allen and Rifle Street, south of dam. Sample to be taken upstream of outfall. Lat/long coordinates are of outfall.
MRS2.5	Darwell and Locust Street	42.093183333333336	-72.5708027777778	Sample taken just downstream of outfall#2, which is on Orange Street, south bank of river, at Lat 42.093361111111115 Long -72.56979722222222
MRS3	Chstger and Rifle Street	42.09427777777778	-72.5664861111111	Just downstream of outfall at MRS1

Maple Brook, Greenfield				
MBG1	Mouth.	42.587531	-72.612619	Mouth.
MBG2	Corner of Arch and Chapman Streets	42.592355	-72.603892	DEP/Skalka OB site 15
MBG3	Garfield Street, near School Street	42.593747	-72.599893	DEP/Skalka OB site 14
MBG4	Off Maple Street near or at CVS parking lot	42.592897	-72.597161	DEP/Skalka OB site 12
MBG5	South Branch: Between North and High Streets	42.594026	-72.593898	north of Maple Street, vicinity of Baystate Medical offices parking lot, DEP/Skalka OB site 14
MBG6	North Branch: Sanderson Street	42.595481	-72.595691	Near back of Greenfield Jr. High School, DEP/Skalka OB site 10
MBG7	North Branch: Riddell Street	42.597995	-72.593505	DEP/Skalka OB site 8

Initial tentative list: All will be visited, assessed for practicality before decision to sample is made.

Figure 2. E. coli sampling sites. Partial list northern sites.

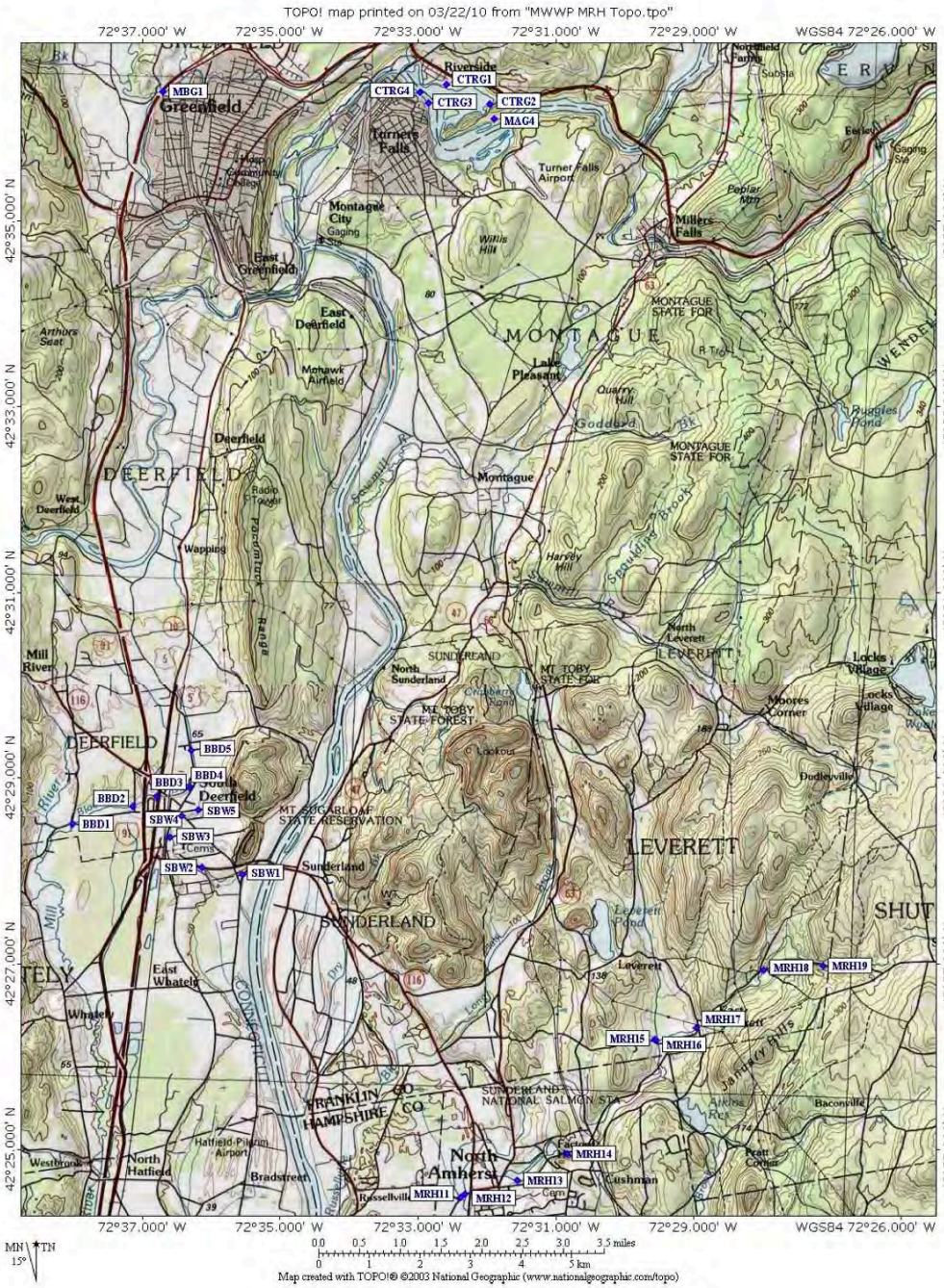

Figure 3. E. coli sampling sites. Partial list northern and southern sites.

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Figure 4. E. coli sampling sites. Partial list southern sites.

Figure 5. Optical Brighteners sampling sites - Greenfield: tentative.

Figure 6. Optical Brighteners sampling sites - Springfield: tentative.

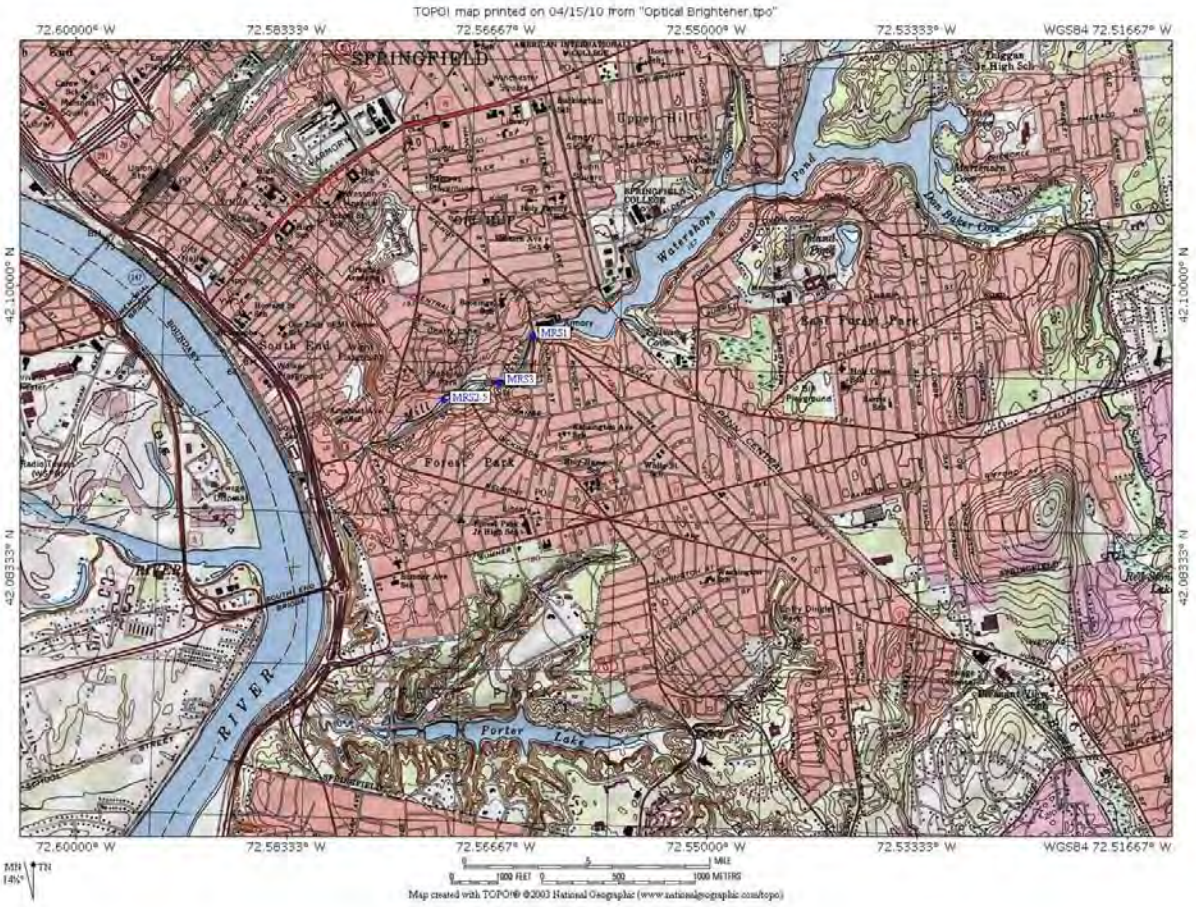

Table 7: Sampling Sites, rationale, frequency and duration

Survey type	Indicators	Sample locations	Site location rationale	Frequency, duration, special conditions	Total # of samples (each parameter), including QC[1]	Field Survey QC
Do river locations support contact recreation?	*E. coli*	See site list. Unless otherwise specified, within 20 feet of shore, at wadeable river access/recreation locations	Representative high-use recreation areas. Previously sampled in CT River TWI project.	1 per week between May and October;	500	One field duplicate per sample event
Bacterial source tracking	*E. coli*	See Table 6	Bracket potential sources	Minimum 3 dry weather samples per location. If high numbers found, or to continue using as control site, sampling may continue beyond that number. Dates to be selected between May and October	700	One or 2 field duplicate samples per sample event. (goal is 10% duplicates)
Bacterial source tracking	Optical brighteners	Piped outfalls. To be determined	Dry weather flows at outfalls may indicate human sources of bacteria.	At least once each selected site.	20	One duplicate per 10 samples: if <10, at least 1 duplicate.

Sample types, special considerations.
Optical Brighteners: to perform the test a hand sewn packet made from mosquito netting which contains an unbleached cotton pad is deployed for approximately 2-3 days. To increase the evaluation time, the pad is replaced with another that is deployed for another 2-3 days. If the pad is left out too long, the surface may be obliterated with dirt and definitive observations can not be made. The sampler should be deployed in water that is moving and is deep enough to cover the sampler. The needed depth can be obtained by shoveling out a trench for the brick. If sediments are disturbed, allow them to settle or float away before the sampler is deployed or the cotton pad will become fouled. The sampler should be placed so that the cotton pad is perpendicular to the current. See “Optical Brighteners SOP 604b CRWC 03-10-10.doc” in Appendix 1.

E. coli. Grab sample at approximately 1 foot depth. All bacteria samples will be collected according to a schedule that allows them to be analyzed within required holding times, during normal operating hours for all participating laboratories.

11. Sampling Method Requirements

MassWWP sampling protocols will be used for all indicators except optical brighteners, as indicated below. Table 6 summarizes the key elements of the SOPs. Complete field sampling SOPs are provided in the appendices.

Table 8: Sample Collection Methods

Parameter	Equipment/ Sample Container	Minimum Sample Quantity	Sample Preservation	Maximum Holding Time	Source of Protocol
Temperature	Alcohol thermometer	N/A	N/A	N/A	MassWWP Standard Operating Procedure Rivers-1 for Temperature Revision 0
E. coli	Sterilized HDPE/PP/ glass; Polystyrene. New disposable sterilized plastic sample bottle for Colilert samples [1]; latex gloves.	120 ml	Chill to $<6^0$C in cooler w/ice	6 hours	MassWWP SOPs Rivers – 3. For Bacteria R.0 *(see appendix*)
Optical Brighteners	Handsewn unbleached cotton pad placed inside plastic covered netting attached to a weight	N/A	After retrieval pads are rinsed in sample water squeezed "dry" and then placed in a plastic bag , kept flat and away from potential contaminants. Kept in dark	3 days	CRWC Optical Brightener SOP – after DEP DWM OB SOP. CN: 58.0
GPS	GPS unit	NA	NA	NA	Manufacturers' instructions

1. Cl residual is not anticipated at any Tier 1 site, based on discussions with WWTP operators and others (e.g. agency personnel) during the CT River Tri State Watershed Initiative project.

Table 9: Field Sampling Considerations

Parameter(s)	Sampling Considerations
temperature	Inspection and post-checking of probes are critical to achieving accurate and precise measurements
Optical Brighteners	The sampler, which includes a weight (e.g. brick) and the sample holder should be deployed in water that is moving and is deep enough to cover the sampler. The needed depth can be obtained by shoveling out a trench for the brick. If you disturb the sediments, allow them to settle or float away before you deploy the sampler or the cotton pad will become fouled. The sampler should be placed so that the cotton pad is perpendicular to the current.
E. coli bacteria	Sterile (new-sealed or autoclaved-sealed) bottle required. Place upright, capped sample bottle under the surface of the water about six inches. Do not rinse bottle. Slowly uncap and let it fill to capacity under the water. With hands away from the bottle opening, bring the bottle up and out of the water, pour sufficient water to leave approximately 1/2 inch air space in the bottle. Cap bottle and tighten. Latex gloves should be worn when sampling in waters suspected of contamination.

When crews arrive at a sampling site, they will sample in the following order:
Bacteria survey: *E. coli*, temperature.

12. Sampling Handling and Custody Procedures

E. coli: Sample container labels will be attached to dry bottles, with the following information: Site ID#, sample type, date and time, preservation, name of sampler, project name (CT River 604b Monitoring Program).

Optical brighteners: After the sampler is retrieved the pads should be rinsed in the sample water squeezed “dry” and then placed in a plastic sandwich bag which keeps it flat and away from potential contaminants. The bag should be labeled on the outside with the collectors’ initials, the water body name, location and or station number, the dates the sampler was deployed and retrieved. A sample label is stapled to the pad when the pads are returned to the lab. The label has the station number, collector’s initials, dates deployed and retrieved. The sample pads should be kept in a storage container and returned to the CRWC lab. The pads do not have to be refrigerated but they should be kept out of the sun.

13. Analytical Methods Requirements

Standard Operating Procedures (SOPs) for analyses performed by each participating laboratory are included in the appendices.

Table 10: Analytical Methods

Parameter	Method #	Source of Method	MDL	Laboratory using method	Special Provisions
E. coli	United water laboratory 1603	EPA 1603 (Modified m-TEC)	1 CFU*	United Water	Sodium Thiosulfate used in all containers for collecting samples from areas suspected or confirmed of having a chlorine residual. If chlorinated, dechlorinate samples to prevent loss of bacteria in sample. Filter smaller volumes when samples are very turbid.
	Bacteria Colilert SOP 604b CRWC 03-11-10	Standard Methods 9223B	1 CFU*	CRWC	
Optical brighteners	Optical Brighteners SOP 604b CRWC 03-10-10	Adapted from DEP CN 58.0		CRWC	

* MDL may change based on sample dilution rates

14. Quality Control Requirements

Table 11: QC Tests

Instrument/ Parameter	Accuracy Checks	Precision Checks	Approx. % Field QC Samples (field duplicates)
Thermometer	Compare with certified thermometer (owned by UMass EAL) at beginning of season	Field duplicates	10%
Optical Brighteners	Blank Pads	Different personnel conduct side-by-side assessments, compare	10%
E. coli	Negative and positive plates	Field duplicates Lab duplicates	10-20%

E. coli field duplicates are taken sequentially.
Project Coordinator will make at least one trip in each reach (southern and northern Massachusetts) in each sampling season (i.e. 2010 and 2011) to accompany and observe volunteers as they collect samples and transport to lab. Project Coordinator will confer with agency and program QA officers to determine what steps to take if quality control samples reveal sampling or analysis problems.

To compare Colilert and EPA 1603 E. coli analysis methods, PVPC and CRWC staff will schedule 3 sampling days in May, prior to or at the beginning of the project sampling season, wherein duplicate samples will be taken from 3 sites, one replicate from each delivered to the United Water and CRWC labs, respectively, for analysis by the different methods. An attempt will be made to collect samples that contain low, moderate and high levels of bacteria, for comparison purposes. CRWC and PVPC will confer on which sites to be sampled for this purpose. Depending on practical considerations (e.g. time, travel distance), these may or may not be identical to those sampled in the program (e.g. Tier 1, 2 or 3 sites listed in Table 6). .Duplicate sampling procedure: when possible, 2 samplers will position themselves side by side in stream, facing upstream, wait for disturbance to settle, then collect samples at same time, with bottles close together during the sample collection. When only 1 sampler is available, sampler will wear latex gloves, hold both caps in one hand, both sample bottles in other hand, collect 2 samples together, then replace caps on bottles.

Optical Brightener field duplicates will be placed side by side in current.

15. Equipment Testing, Inspection, and Maintenance Requirements

Table 12: Equipment Testing, Inspection, and Maintenance Requirements

Equipment Type	Inspection Frequency	Type Inspection	Maintenance, Corrective Action
Autoclave (bacteria analysis)	Weekly	Inspect and clean as needed. Spore check is run with a batch to ensure the autoclave is reaching proper temperature and pressure	Clean, lubricate surfaces; maintain water surfaces according to user's manual.
Sample prep equipment (e.g., sealer for Colilert bacteria method)	Prior to each sampling	Visual inspection, clean, and maintain according to manufacturer's recommendations.	Spare sampler
Incubator (bacteria analysis)	Prior to each sampling	Check temperature with max/min electronic thermometer (traceable to NIST)	Spare batteries, electrolyte
Thermometer	Before each sampling date	Visual, breakage/ integrity of column.	Keep spares on hand.
UV Lamp for Optical Brightener analysis	Before each analysis session	Visual; turn on to check proper functioning.	Spare bulbs on hand.

All inspection results and description of any maintenance performed will be recorded in a maintenance logbook. Maintenance records will be reviewed and signed off monthly by the QA Officer.

16. Instrument Calibration and Frequency

Table 13: Equipment Calibration

Equipment Type	Calibration Frequency	Standard or Calibration Instrument Used
Thermometers	At beginning of sampling season	NIST thermometer at CRWC laboratory and putting thermometers in ice water and tepid water

All calibration activities will be logged in a project notebook.

17. Inspection and Acceptance Requirements for Supplies

Sample bottles will be provided by participating laboratories. Bacteria sampling bottles will be autoclaved by participating laboratories prior to collections. Bottles will not contain thiosulfate - it is not expected that chlorine will be present in the water sampled. Coolers and ice packs provided by PVPC.

Table 14: Supplies Inspection, Acceptance Procedures

Supplies	Inspection Frequency	Type of Inspection	Available Parts	Maintenance
reagents/ standards for use in coliform analysis (See U nited Water and CRWC laboratory SOPs for details)	Before each sampling date	Visual inspection of quantity and expiration date	Spare, fresh solutions	Storage according to manufacturer's recommendations, Annual replacement at beginning of sampling season
Latex gloves	Before each sample date	Visual inspection of quantity, integrity	Spares	
Bags (e.g., zip lock)	Before each sampling date	Visual inspection of quantity, integrity	Spares	Storage according to manufacturer's recommendations
Field and Lab sample sheets	Before each sampling date	Visual	Additional copies and pens	
Sample Bottles	Before each sampling date	Integrity, cleanness and seal for nutrient bottles, verified sterility of bacterial sample bottles, equipment or rinsate blank for reused bottles	One set of spare bottles	Clean after use
Cooler	Before each sampling date	Cleanness, Ice packs	NA	Clean after each use
Optical Brightener: rope, monofilament line, container baskets	Before each deployment	Visual inspection for integrity.	Spares	Clean after each use.

18. Data Acquisition Requirements

No data other than that collected by project participants under the auspices of this QAPP will be used, other than to consult NOAA weather web site as needed to confirm dry weather conditions for sampling dates for Tier 2 and 3 sites.

19. Data Management

Field samplers will record data on field sheets, review and initial them before leaving each sampling site. Any errors or problems will be noted on field sheets. Corrective actions needed will be discussed with Field/Project Coordinator if feasible; if communication with Field/Project Coordinator is not feasible, field sampler will determine what corrective action is needed and will undertake such action. Field samplers will make copies of field sheets and mail to Field/Project coordinator every 2 weeks.

Project Coordinator will issue QC-site reconciliation sheets to field samplers prior to field sampling events. This will occur on a weekly to monthly basis. Field samplers will check appropriate fields to confirm QC sampling has occurred as scheduled, or will document departure in both the field sampling forms and the QC-site reconciliation sheets. Field samplers will contact Project Coordinator on the day of sampling to explain any departure from the planned QC sampling activities.

As practical, Project/Field Coordinator will review sheets and confer with samplers on any needed corrective action.

Field samplers will fill out the chain-of-custody form for forwarding the processed samples to the laboratory. Each person who handles or transports samples will also sign the custody form upon receipt of the samples. Chain of custody forms will follow samples to the lab and back to Project Coordinator by mail or pickup on a bi-weekly or monthly basis.

Once laboratory analyses are complete, the laboratory personnel will email lab results to the Project Coordinator.

The Project Coordinator and/or Data Management Coordinator will enter raw field and lab data into the PVPC and CRWC computer systems; will then email results to WRRC. When field sheets are received by Data Management Coordinator, computer-entered data will be compared with field sheets for accuracy. Suspected errors will be discussed with field samplers; corrections will be made as necessary to data on project web site and in project database. Project Coordinator and/or Data Management Coordinator will use QC-Site reconciliation sheets and communications from field samplers to document QC results from each sampling event.

The Project Coordinator and/or Data Management Coordinator will adapt STORET data entry spreadsheets used in the TWI program for use in this program. These will define projects, stations, and results. At the end of each sampling season, after data have been reviewed to correct or discard inaccurate entries and data not complying with data quality objectives, Project Coordinator and/or Data Management Coordinator will enter results data into the STORET data spreadsheets and submit to EPA, either by entering directly into the EPA STORET database or by sending Excel spreadsheet to EPA Region I staff for upload to STORET.

Original data sheets will be stored in PVPC offices, Springfield. Disk back-ups and copies of the data sheets will be made and stored in a separate location at PVPC WRRC offices. Computer files of lab results from the CRWC lab will be stored on a shared drive that is backed up daily, weekly, and monthly. Daily backups are stored in the

office; weekly and monthly backups are stored off site. All paper field data sheets will be filed in a metal filing cabinet at the office in Greenfield.

Project staff and volunteers may take digital photographs to assist in documentation of sampling site locations, outfalls or dry weather flows of interest, other visible signs of pollution, and other noteworthy phenomena encountered during conduct of this project. Digital photos will be stored on the PVPC computer in appropriately named folders (e.g. identifying sampling sites or a "visible pollution photos" folder). Some photos may be posted on project web site as part of outreach activities.

Documentation of data recording and handling, including all problems and corrective actions, will be included in all preliminary and final written reports.

Examples of data forms and checklists are provided in Appendix 1.

Table 15: Data Management, Review, Validation, Verification Process

Activity	By whom	Corrective action, if needed
Fill out, distribute QC-site reconciliation sheet to field samplers	Project Coordinator	Field samplers document departures from planned QC sampling, contacts Project Coordinator. Additional QC sampling scheduled as needed in future sampling events.
Check labels just prior to sampling, to ensure correct labeling of container.	Field sampler	Correct label or change container
At time of sampling, record data, sign field sheets and check off or comment on QC – site reconciliation sheets.	Field sampler	
Fill out, sign chain of custody (COC) forms for samples going to lab.	Field sampler	
Before submitting field sheets to field/Project Coordinator, check for reasonableness to expected range, completeness. Make copies of field sheets. Send field sheets to field/Project Coordinator every 2 weeks.	Field sampler	Flag suspect data.
Upon receipt of field sheets, recheck for reasonableness to expected range, completeness, accuracy, and legibility. Sign COC form.	Field/Project Coordinator	Confer with field sampler(s) on any questions/problems found.. Flag suspect data.
Upon receipt of samples and COC forms, check to see that forms correspond to number of samples, condition of samples as stated on COC forms. Sign COC forms. Copies of COC forms are made, sent to field/Project Coordinator.	Lab Coordinator, Field/Project Coordinator.	Confer with field/Project Coordinator. Contact field samplers as needed to locate missing samples, data records. In case of missing/spoiled samples or data records, authorize resembling as needed and feasible. If resampling is not feasible, flag all suspect data.
Upon completion of laboratory analyses, fill out lab sheets, including data on QC tests. Review for reasonableness to	Lab Coordinator.	Re-analyze if possible. If not, confer with Project Coordinator. Flag all suspect data.

Activity	By whom	Corrective action, if needed
expected range, completeness. Make copies of lab sheets. Send electronic copy of lab sheet to Project Coordinator.		
Upon receipt of electronic copy of lab sheets, review for completeness and legibility.	Monitoring/Data Mgt. Coordinator.	Confer with lab coordinator.
Upon completion of data entry, print out raw data. Compare with field/lab sheets for accuracy.	Data Management Coordinator or other volunteer. Data entry personnel may review their own work, but a different person than data entry person shall perform the final accuracy comparison.	Re-enter data.
Translate raw data printouts into preliminary data reports: run statistical analyses and/or prepare graphical summaries of data. Compare lab results with QC-site reconciliation sheets to document QC activities/results. Check for agreement with QC objectives stated in Tables 3 and 11 and for completeness.	Project Coordinator/Data Management Coordinator	Confer with QA Officer. Flag or discard suspect data.
Post data on project web site, email to cooperating organizations for use in their outreach activities.	Project Coordinator/Data Mgt. Coordinator	
In-season (at least once) and end of season review of collected data sets (individual sample runs and season-total compilations); review for completeness and agreement with QC objectives and DQOs.	Project Coordinator. TAC if applicable. Share with QA Officer.	Flag or discard suspect data. Decide upon any restrictions in use of data with respect to original data use goals. If mechanism is in place to ID suspect data, use footnotes to indicate such data and to describe data use restrictions.

20. Assessments and Response Actions

The progress and quality of the monitoring program will be continuously assessed to ensure that its objectives are being accomplished. The Project Coordinator will periodically check to see the following:

a. Monitoring is occurring as planned;
b. Sufficient written commentary and supporting photographs exist;
c. Sufficient volunteers are available;
d. Volunteers have been observed as they sample their sites - Project Coordinator will make at least one trip in each reach (Northern MA, Southern MA) as early as possible in each sampling season to accompany and observe volunteers as they collect samples and transport to lab. Project Coordinator will check that the Samplers are safe while monitoring, to observe and correct sampling practices, field data form entries and monitoring elements.
e. Samplers are collecting in accordance with project schedules;
f. Data sheets and custody control sheets are being properly completed and signed;
g. Data are properly interpreted;
h. Plans for dealing with adverse weather are in place;
i. Retraining or other corrective action is implemented at the first hint of non compliance with the QAPP or SOPs;
j. Labs are adhering to the requirements of their QAPP, in terms of work performed, accuracy, acceptable holding times, timely and understandable results and delivery process;
k. Data management is being handled properly, i.e. data are entered on a timely basis, is properly backed up, is easily accessed, and raw data are properly stored in a safe place;
l. Procedure for developing and reporting the results exists.

The Project Coordinator shall confer with the QA Officer as necessary to discuss any problems that occur and what corrective actions are needed to maintain program integrity. In addition, the Project Coordinator and QA Officer shall meet at the end of the sampling season, to review the draft report and discuss all aspects of the program and identify necessary program modifications for future sampling activities. Corrections may include retraining volunteers; rewriting sampling instructions; replacement of volunteers; alteration of sampling schedules, sites or methods; or other actions deemed necessary. All problems discovered and program modifications made shall be documented in the final version of the project report. If modifications require changes in the Quality Assurance Project Plan, these changes shall be submitted DEP and EPA for review.

If data are found to be consistently outside the Data Quality Objectives (see Section 7) the Project Coordinator, in consultation with project, DEP and EPA QA officers will review the program and correct problems as needed.

21. Reports

Data that have passed preliminary QC analysis as described in Table 19.1 will be posted on the project web site and emailed to the local press and to participating organizations that have agreed to post data at information kiosks and similar venues at their sites. A caveat will accompany these or any data released on a preliminary basis, explaining that

they are for review purposes only and subject to correction after completion of a full data review occurring at the end of the sampling season.

The Project Coordinator will write a year one and a final report, with assistance from the QA Officer. This will be sent to the QAPP distribution list. The final report will include (updated as necessary) any tables and graphs that were developed for initial data distribution efforts (i.e. the web site and media), and it will describe the program's goals, methods, quality control results, data interpretation, and recommendations. This report may also be used in public presentations.

The year one and final reports will include discussion of steps taken to assure data quality, findings on data quality, and decisions made on use, censor, or flagging of questionable data. Any data that are censored in reports will be either referred to in this discussion, or presented but noted as censored.

Any reports submitted to Massachusetts state agencies will generally conform to MassDEP guidelines CN 0.74 *Recommended Content of 3rd Party Data,* CN 0.78 *Data Deliverable Guidelines for Grant Projects* and /or other MassDEP guidance. MassDEP will be contacted prior to submission of raw data and final reports.

22. Data Review, Validation and Verification Requirements

The Project Coordinator will review field and laboratory data after each sampling run and take corrective actions as described in Table 19.1. At least once during the season, at end of the season and if questions arise, the Project Coordinator will share the data with the QA Officer to determine if the data appear to meet the objectives of the QAPP. Together, they will decide on any actions to take if problems are found.

23. Validation and Verification Methods

Data validation and verification will occur as described in Table 19.1, and will include checks on:

- Completion of all fields on data sheets; missing data sheets
- Completeness of sampling runs (e.g. number of sites visited/samples taken vs. number proposed, were all parameters sampled/analyzed)
- Completeness of QC checks (e.g. number and type of QC checks performed vs. number/type proposed)
- Accuracy and precision compared to data quality objectives
- Representativeness of samples and resulting data by examining survey metadata for unusual conditions and occurrences that may have affected the validity of results.

24. Reconciliation with Data Quality Objectives

At the conclusion of each sampling season, after all in-season quality control checks, assessment actions, validation and verification checks and corrective actions have been taken, the resulting data set will be compared with the program's data quality objectives (DQOs). This review will include, for each parameter, calculation of the following:

- Completeness goals: overall % of samples passing QC tests vs. number proposed in Section 7
- Percent of samples exceeding accuracy and precision limits
- Average departure from accuracy and precision targets.

After reviewing these calculations, and taking into consideration such factors as clusters of unacceptable data (e.g. whether certain parameters, sites, dates, volunteer teams etc. produced poor results), the Project Coordinator and Project QA Officer will evaluate overall program attainment.

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APPENDIX 1

Field and Laboratory Operating Procedures

- R-3 Bacteria Rev.0
- SOP United Water EPA 1603
- Bacteria Colilert SOP604b CRWC 03-11-10
- Optical Brighteners SOP 604b CRWC 03-10-10

APPENDIX 2

Sample bottle labels, data sheets, forms

Connecticut River 604B Monitoring Program

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419 acapra@pvpc..org 413-781-6045

FIELD DATA SHEET – *E. coli monitoring*

DATE:_____ SAMPLER NAMES:_____

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:

_____

Was the rain ❑light, ❑moderate, or ❑heavy?

Site Name/ID	Sample ID	Time	Air °C	H_2O °C	H_20 Color	H_2O Odor

Color, odor codes:
Water color: clear; cloudy; muddy, **green, brown, tea** colored, **ir** = iridescent, **other** (describe):_____

Water odor: none, rotten **egg**, **gas**oline, **sewage, det**ergent, **fish**, **other** (describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

QC – Site reconciliation Sheet - E. coli sampling

Date	Sample ID	Corresponding site	QC Type	*Sampler*	*Comment*

Project Coordinator fills out columns 1 – 4 (Date through QC type).
Sampler fills out name, comment columns.
Date = date sample taken
Sample ID = lab initial plus "QC": i.e. AQC (Aquacheck), GQC (Greenfield), CQC (Chicopee), or HQC (Holyoke). If >1 QC samples are taken on the same day for the same laboratory , use numbering system (e.g. AQC1, AQC2) to differentiate. ***This Sample ID is also entered in Sample ID field of field sampling form.***
Corresponding site: enter site # if the QC is a duplicate. Otherwise enter "QC".
QC Type: D = Duplicate; B = blank.
Sampler: Enter Sampler name/initials
Comment: Enter check mark to indicate QC was taken as planned; otherwise note what occurred (e.g. duplicate may have been taken from a different site). May use back of sheet if additional space is needed. If QC sample was not taken as planned, field sampler must also enter comment in field sampling form to explain what occurred.

Connecticut River 604B Monitoring Program

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Field Data Sheet - Optical Brightener sampling

SITE NAME:_____ SITE NUMBER: _____

DATE:_____ TIME:_____ Deploy___ or Retrieve ___ Sample.

VOLUNTEERS:_____

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: □Clear □Partly Cloudy □Overcast □Cloudy □Drizzle □Raining □Other:

Air Temperature: _____°C

Weather past two
days:_____
If it has rained in past two days, estimate amount of precipitation:_____inches
Was the rain □light, □moderate, or □heavy?

WATER OBSERVATIONS (check appropriate boxes):
Water color: □clear □cloudy □muddy □green □brown □tea colored □iridescent

□other:_____

Water odor: □none □rotten egg □gasoline □ sewage □detergent □fishy

□other:_____

Any floating debris?
(describe):_____

STREAM USE OBSERVATIONS
Any human use of stream?

Describe:_____

Any Livestock or wildlife?

Describe:_____

Comments:

Connecticut River 604B Monitoring Program

Connecticut River Watershed Council – 15 Bank Row Greenfield, MA 01301
adonlon@ctriver.org (413) 772-2020

Lab Data Sheet – *E. coli* Bacteria

Laboratory: _____

Date: _____ Analyst: _____

Water Body: Connecticut River

E. Coli Sample Results

Sample ID & Replicate #	Volume ml	Count	Colonies/ 100 ml

Sample bottle label
For E. coli

Sample ID
_____

Site Location _____

Site No. _____ Sample Type:_____

am
Date: _____ Time: _____pm
mm/dd/yr

Preservation Method: _____

Sampler's Name _____

Optical Brighteners sample bag label - duplicate used to staple to pad when returned to laboratory

Optical Brightener Sample

Water Body _____

Site Location _____

Site No. _____

Date deployed: _____

Date retrieved: _____
mm/dd/yr

Sampler's Name _____

Chain of Custody Form
Connecticut River 604b Monitoring Program

Name of Lab:_____

Sampler's Signature:_____

Sample IDs	Site name/ number	Date, Time	Type	#Bottles	Analyses	Comment *(Initial all comments)*
					E. coli	

Relinquished by: Signature	Received by: Signature	Condition when received (i.e. warm, cool, frozen)	Date/Time
Relinquished by: Signature	Received by: Signature	Condition when received (i.e. warm, cool, frozen)	Date/Time
Relinquished by: Signature	Received by: Signature	Condition when received (i.e. warm, cool, frozen)	Date/Time
Relinquished by: Signature	Received by: Signature	Condition when received (i.e. warm, cool, frozen)	Date/Time

Additional Comments:

Training record form

Specific Training Type & Description	Trainer(s)	Training Date(s)	Trainees	Location of Training Records
EXAMPLE: E. coli sampling	Project Coordinator.	TBD – within 3 weeks of start of annual sampling in May	Volunteers *to be named*	PVPC computer (electronic copy), office filing cabinet (paper copy)

APPENDIX G

Field Data Sheets - 2010

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7/7/10 **SAMPLER NAME(S):** Jim Butler / Max Puda

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☑Overcast ☐Cloudy ☐Drizzle ☐Raining
☐Other: Hot, Hazy + Humid
Weather past two days: Hot

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
Bassett	HRCI	9am	25°	27°	Clear	None

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear) cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): _____

H_20 odor: (none) rotten egg, gasoline, sewage, detergent, fish, other
(describe): _____

Any floating debris?
(describe): Nothing substantial nor out of ORdinary

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 10/6 **SAMPLER NAME(S):** Max Dulz

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☒Raining ☐Other:

Weather past two days:
dry, light rain

Was the rain ☐ light, ☒moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
B. Bassett Boat	MAC1	10:35	22°C	17° C		

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7/21/10 **SAMPLER NAME(S):** Brian Hirschberg

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☑Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
partly cloudly w/ scattered showers

Was the rain ☑light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
Bassett Boat	HAC 1	9am	25°C	26°C		

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe): c.loudy (slightly)

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other (describe): none

Any floating debris?
(describe): sticks

Comments:

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: Sept. 8th **SAMPLER NAME(S):** Max Duda

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☑Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
Early Thunderstorms, moderate rain

Was the rain ☐ light, ☑moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Bassett Boat	MAC1	10:30	24°C	24°C		

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_2O color: clear, (cloudy), (muddy), green, brown, t ea colored, ir = iridescent, other

(describe):

H_2O odor: (none), rotten egg, gasoline, sewage, detergent, fish, other
(describe):

Any floating debris?
(describe): not much, Mainly weeds, some mold

Comments: despite the rain, water is very shallow. very low tide

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/15 **SAMPLER NAME(S):** Max Duda

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ☒Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
No rain

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Bassett Brook	Mac1	10:15	18°C	20°C		

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/22 **SAMPLER NAME(S):** Max Duda

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
Clear, no rain

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Bassett	MAC1	10:15	23°C	21°C		

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/1/10 **SAMPLER NAME(S):** Butler Duda

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Clear, 90's

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Bassett Boat	MAC #1	9:30am	31°	28°	Clear	None

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/29 **SAMPLER NAME(S):** MacDuda / Jim Buker

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☑Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
Rain, Rain, and more rain

Was the rain ☐ light, ☑moderate, or ☐heavy?

	Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
(1)	North end Bassett Boat	MAC1B	10:25	25°	23°		
(2)	South of Bridge	Mac1					

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other
(describe): Both sites

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other
(describe): Both sites

Any floating debris?
(describe): No

Comments:

CT RIVER MONITORING

SITE LOCATION SHEET

Site Name: Davitt Bridge/Granby Road

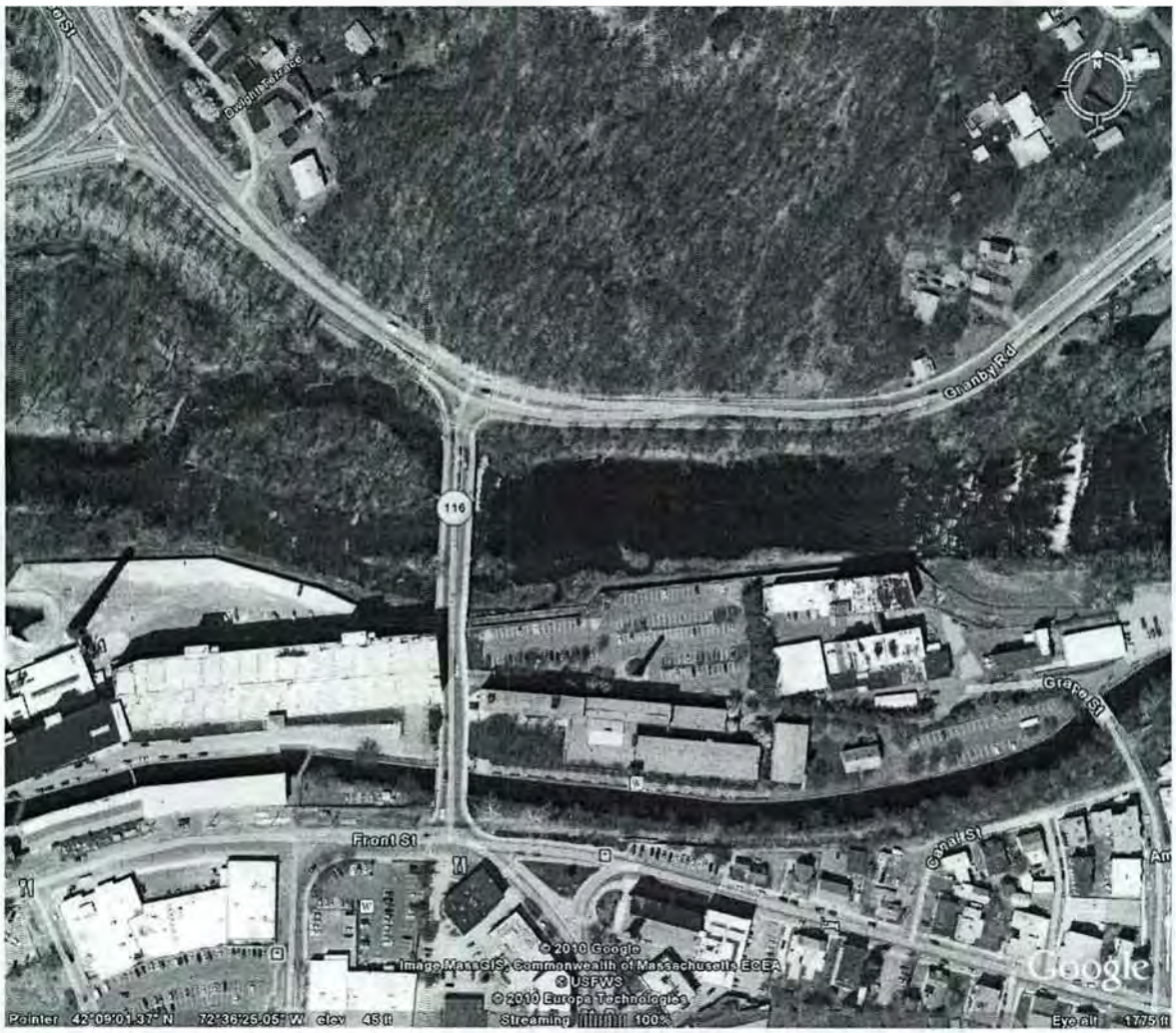
Site Number: MAC2

Street Address/Town: Chicopee

Nearest major highway: Route 391

Road names and/or numbers connecting major highway to the site access road: Route 116

Specific directions from access road (named above) to exact location of sampling site: From Route 116 at northern end of Davitt Bridge, follow Granby Road east for .1 mile. Turn into first driveway on right where you see small wooden kiosk. Park car here. Walk on sidewalk along Granby Road in a westerly direction. Just before you reach second phone pole, turn left to get trail that will take you to river's edge. Follow trail, taking two rights and take steep descent down to small beach area. Take sample from right end of beach.



Gambarini, Patty

From: Keith Davies [8davies@earthlink.net]
ɜnt: Wednesday, July 07, 2010 10:07 PM
ʈo: Gambarini, Patty
Subject: Re: Ct River monitoring comments

Davitt & Medina collected and delivered @ 10:12 AM today.

I have been collecting Davitt/Granby RD at the base of the lowest rifle, across from a large brick building. I have rigged a sample pole, so I grab a bit out in the current (I wear hip boots too) in about a foot or two of water. I usually fill out all the generic field sheet info the night before and add the day specific stuff in the field. The trail down is a bit steep and a log has fallen across trail too. there is some poison ivy there.

Medina is easy, just grab on upstream side of ramp, reaching out into the gentle current. I have noticed some variations in the river level though.

I'll be back for the 7/28 sampling..

Keith D

On Jul 1, 2010, at 3:46 PM, Gambarini, Patty wrote:

> Hi,
>
> I will be away through next Tuesday so I want to send you a reminder now about next week's monitoring on Wednesday, July 7th. The quality control site where a duplicate sample must be taken is Jones Ferry.
>
> We have coverage for the following sites on the following dates based on your vacation schedules:
>
> July 14
> Davitt Bridge (Keith Davies)
> Medina Street Boat Ramp (Keith Davies)
> Jones Ferry (Bill and Joy Erickson)
> Berchulski Fisherman Access (David Webber)
>
> July 21
> Davitt Bridge (Keith Davies)
> Medina Street Boat Ramp (Keith Davies)
> Brunelle's Marina (Alan Berrouard)
> Berchulski Fisherman Access (David Webber)
>
> Have a very happy holiday weekend!
>
> Best wishes,
> Patty Gambarini
>
> *Environmental Planning Specialist*

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/2/10 **SAMPLER NAME(S):** K Davies

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
sunny/warm 2days ago / some rain yesterday

Was the rain ☒ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
DAVITT BRIDGE	MAC2	9:36 A	22.5	21.5	clear	musty

Delived 10:20AM to Lab.

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Sample taken in current below last rapid/ledge pole.

Color and odor codes:

H_2O color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): very light tea

H_2O odor: none, rotten egg, gasoline, sewage, detergent, fish, (other)
(describe): musty - slight

Any floating debris?
(describe): NO but slight - thin foam @ base of falls

Comments: small fish/minnows observed
fisherman caught shad.
dead lamprey downstream.

minor storm line flow into river near site.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/9/10 **SAMPLER NAME(S):** K Davies

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ☒Overcast ☒Cloudy ❑Drizzle ❑Raining ❑Other:

delivered 10:20 AM HWWTP

Weather past two days: Sunny - Partial clouds - breezy 70s

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Davett Bridge	MAC 2	9:33A	15.5	19.5	clear	musty

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

pole grab in current at lowest rapid

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other
(describe): clear maybe light tint/tea.

H_20 odor: none, rotten egg, gasoline, sewage, detergent, (fish), (other)
(describe): musty -

Any floating debris?
(describe):

Comments: small foam near edge
small flow from 20" storm line nearby
small fish/minnows observed.
NO odor
Water clear.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/16/10 **SAMPLER NAME(S):** K Davies

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☒Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining
☐Other: ~~55~~ 60°F

Weather past two days: Monday - cloudy 60s
Tuesday - Sunny 70
last rain - Saturday (moderate)

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name MAC 2	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Dartt Bridge / Granby Road	MAC 2	9:38A	18.5	19.0	clear	none*

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Delivered 10:23AM HWWTP

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other
(describe): very low tint ?

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other
(describe): Hard to tell, maybe slighly musty

Any floating debris?
(describe): some scum along shore

Comments: pole grab @ lowest riffle.
flow out of nearby storm pipe - low.
small fish/minnow observed @ outfall - clear no odor.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/23/10 **SAMPLER NAME(S):** KDavis

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☒Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Monday - Sunny 80
Tuesday - cloudy 80, sun in AM, some evening showers

Was the rain ☒light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Dam+ / Granby Rd	MAC 2	9:40A	24.0	23.0	Lt tea	musty,
	HQC					

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

pole grab - lowest rapid

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, tea colored, ir = iridescent, other

(describe): Light tea color

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other slight musty
(describe):

Any floating debris?
(describe): Light foam @ edges

Comments: Geese in river - opposite side.
small storm pipe running - clear - no odor
small fish visible @ spot.

collected dup
delivered
Bth
10:20AM
HWWTP

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/30/10 **SAMPLER NAME(S):** K Davis

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Monday - sunny - HOT 90° Humid
Tuesday - sun/clouds - HOT. 80° Humid

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Davitt/Granby Rd	MAC 2	9:27	19.75	24.0	clear	musty

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

pole grab @ lowest rapid.

delivered @ 10:12 AM

Color and odor codes:

H_20 color: (clear) cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe):

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, (other) musty - slight (describe):

Any floating debris?
(describe): some foam/scum in calm areas

Comments: water level - lowest so far.
clear flow from nearby storm pipe - no odor / small fish @ inlet.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7/7/10 **SAMPLER NAME(S):** IC Davies

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ☒Partly Cloudy ❑Overcast ☒Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: Sunny - Hot 90s no rain

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Davitt / Granby Rd	MAC 2	9:30A	29.0	27.5	clear	none/slight

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

pole grab.

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other
(describe): slight tint

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, (other)
(describe): very slight musty ness

delivered 7/7/10 @ 10:10 AM

Any floating debris?
(describe):

Comments: less foam along edge than before
River level appears lower
storm pipe flow lowest - slight, clear, no odor, small fish

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: JULY 14 . 10 **SAMPLER NAME(S):** BRIAN MARKEY

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☑Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: HAZY HOT HUMID. RAIN OVER NIGHT INTO JULY 14TH.

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
DAVITT BRIDGE	MAC2	6:40A	26	26	CLEAR	NONE
MEDINA STREET	MAC3	7:10A	26	27	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

DAVITT (describe): CLEAR TO ABOUT 2FT DEEP. ~~SOME FOAM ON TOP~~
MEDINA CLEAR

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other

DAVITT (describe): NONE
MEDINA NONE

Any floating debris?
(describe): DAVITT: SOME FOAM ON TOP. SILVER DOLLAR SIZE
MEDINA: LOOKS LIKE OIL FLOATING ON SURFACE
A FEW TWIGS & ORGANIC MATTER

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: JULY 21 2010 **SAMPLER NAME(S):** BRIAN MARKEY

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining
☐Other:

Weather past two days:

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
DAVITT BRIDGE	MAC 2	840	21	26	CLEAR	none
MEDINA ST	MAC 3	900	21	26	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): CLEAR AT BOTH SITES

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other
(describe):

Any floating debris?
(describe): NONE AT DAVITT
SMALL ORGANIC MATTER AT MEDINA

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7/28/10 **SAMPLER NAME(S):** IC Davies

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Sunny, warm, high 80s

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Dav. Pl/Granby Rd	MDC 2	9:23A	24.0	25.0	tea	musty

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

pole grab in flow

delivered 10:05 AM NWWP

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, tea colored, ir = iridescent, other
(describe): slight tea tint very light

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): musty

COC Form OK

Any floating debris?
(describe): very little foam – slight.

Comments: nearby storm line flowing – clear no odor little foam

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/4/10 **SAMPLER NAME(S):** K Davies

WEATHER OBSERVATIONS (check appropriate boxes)
Weather now: ❑Clear ❑Partly Cloudy ☒Overcast ☒Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: sun/clouds low 80s no rain

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Davitt/Granby Rd	MAC2	9:29A	25.0	24.0	tea	slight musty

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Delivered 10:05AM

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, tea colored, ir = iridescent, other
(describe): slight tea - very light

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): slightly musty.

Any floating debris? (describe): slight amount of foam (below rapids)

Comments: flow from storm pipe very low (No odor clear

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/11/16 **SAMPLER NAME(S):** K Davis

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Hot / Humid High 85°

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Davitt/Granby Rd	MAC 2	9:20A	25°C	26°	clear	slight

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

pole grab in current. // 10:00 AM delivered.

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other
(describe): very slight tint - clear

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): slight musty

Any floating debris?
(describe): some foam

Comments: storm drain flow - very low - trickle
clear - no odor - small fish

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/18/10 **SAMPLER NAME(S):** K Davies

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ☒Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: Mon – some rain, Tue – sunny > Second half info

Was the rain ❑ light, ❑moderate, or ❑heavy? unsure

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Davitt/Cumberland	MAC2	9:30A	22.0	24.25	lt tea	~~brown~~ musty

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Delivered 10:12A

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other
(describe): "very" slight/light tint

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): very slight mustiness

Any floating debris?
(describe): very little foam

Comments: storm drain – slight trickle – clear no odor
saw frog @ inlet

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/25/10 **SAMPLER NAME(S):** K Darin

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☐Overcast ☒Cloudy ☒Drizzle ☐Raining ☐Other: Light - slight - occasional,

Weather past two days: Sunday Rain
Monday Drizzle - slight
Tuesday cloudy - drizzle, slight

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Davitt/Granby	MAC 2	9:36 A	~~23.5~~ 18.5 Kd	20°	clear	musty

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

delivered 10:20 AM.

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, (other)
(describe): slight mustiness

Any floating debris?
(describe): very little foam (less than last week)

Comments: storm drain - trickle - clear - no odor
small fish.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/1/10 **SAMPLER NAME(S):** K Davies

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: sunny - Hot 90°

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Davitt/Graby/R	MAC2	9:35A	26.0	24.5	clear	must/

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

delivered 10:10A

Color and odor codes:

H_2O color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):

H_2O odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): slight mustiness

Any floating debris?
(describe): very little foam

Comments: 50ft upstream of sample site. storm line flow slight - green duck weed like particles in area. no odor - some cloudiness small 3" fish observed, ducks upstream.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/8/10 **SAMPLER NAME(S):** IC Davies

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☑Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Monday – Sunny / Tuesday – Sunny / Light rain last night

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Davitt/Granby Rd	MAC 2	9:35A	23.5	22.5	clear	faint

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

delivered 10:13AM

Color and odor codes:

H_2O color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): very slight

H_2O odor: none, rotten egg, gasoline, sewage, detergent, fish, (other)
(describe): slight - faint mustiness

Any floating debris?
(describe): no virtually no foam.

Comments: storm drain line – low flow, bit more than trickle clear - no odor
duck weed like surface covering. Is this from retention pond near parking area??
frogs present. Ducks in River.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/15/10 **SAMPLER NAME(S):** K Davis

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ☒Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining
❑Other: mostly sunny

Weather past two days: Mon Tue / sunny 70s clear no rain

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Davitt/Gaylord	MAC2	9:25	16.5	19.5	clear	musty

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

DL 10/07/A

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): "slight" musty

Any floating debris?
(describe): some foam - small amount

Comments: Storm line barely trickle. Duckweed. Seems linked to retention pond & parking area. Flow appears to have been steady all summer!

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/22/10 **SAMPLER NAME(S):** K Davies

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☒Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Sunny 70s

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Davis/Granby Rd	MAC 2	9:32A	21.0	18.0	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

del 10:14A.

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe):

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other (describe): may hint of mustyness

Any floating debris? (describe): NO virtually no foam

Comments: storm line barely trickle, duckweed.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/29/10 **SAMPLER NAME(S):** Patty Gaukaroni

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: rain

Was the rain ❑ light, ❑moderate, or ☒heavy? @ times

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Panth	MAC2	7:40am	20°	18°	clear	Moldy
Medina	MAC3	7:55	20	18	tea	Moldy

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): no

Comments: lots of trash @ both locations.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/29/10 **SAMPLER NAME(S):** JC Davis

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Rainy

Was the rain ☒light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Davitt/Graby Rd	MAC2	9:40A	21.5	20.0	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Delivered 10:20A

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other
(describe): Hint of musty -

Any floating debris? None very slight foam
(describe):

Comments: Storm drain flow light trickle / duckweed gone. Frog observed. Flow clear no odor cormorants observed downstream

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419 acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020 adonlon@ctriver.org

DATE: 10/6/10 **SAMPLER NAME(S):** Patty Gambaccini

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ☒Raining
❑Other:

Weather past two days: rain overnight, overcast yesterday

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Davitt Bridge	MAC2	9:05	14°	16°	muddy	none
Medina St.	MAC3	9:20	14°	16°	muddy	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments: Connecticut River high flows @ Davitt
lots of mud washed onto bank @ Medina St.
high flow

CT RIVER MONITORING

SITE LOCATION SHEET

Site Name: Medina Street Boat Ramp

Site Number: MAC3

Street Address/Town: Chicopee

Nearest major highway: Route 391

Road names and/or numbers connecting major highway to the site access road: Route 116

Specific directions from access road (named above) to exact location of sampling site: From Route 116, Take Wilson Avenue to end. Turn left on Old Field Road and bend right onto Paderewski Street. Take first left onto Granger Street and turn right just before gates to Waste Water Treatment Plant onto Medina Street. Follow Medina Street to end and park. Take sample from right side of boat ramp.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/2/10 **SAMPLER NAME(S):** K Davies

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
sunny-warm 2 days ago / some rain yesterday

Was the rain ☒light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Medina st/Boat Ramp	MAC.3	9:56A	22.5	23.0°	clear	none

Delivered 10:20 AM CHWP LAB

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

slight current. pole right side of ramp.

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other
(describe): Bottom quite visible

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other
(describe):

Any floating debris?
(describe): leaves, pollen

Comments: minnow/sm fish swimming nearby. mussle shells on bottom

shore Fisherman caught large bass.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/9/10 **SAMPLER NAME(S):** K Davies

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☒Overcast ☒Cloudy ☐Drizzle ☐Raining ☐Other:

delivered 10:20 AM HWWTP

Weather past two days: Sunny - Partial clouds - breezy 70s

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Medina St	MRC 3	9:50	16.0	22.0	clear*	musty

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

pole grab in current off upstream side of ramp

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe): mostly clear, maybe slightly-very cloudy

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, (other) musty (describe):

Any floating debris? (describe): yes. sticks, branches, small logs

Comments: River High than last week. - few feet? small fish / minnows observed.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/16/10 **SAMPLER NAME(S):** K Davis

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ☒Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: Monday cloudy 60's Tuesday - Sunny 70 last rain - Saturday - Moderate

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
MAC 3 Medina Ft Bait Rap	Mac 3	9:57A	18.0	19.5	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Delivered 10:23A NWWTP

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris? no
(describe):_____

Comments: small fish/minnows observed muscle shells
River level down from last week.
pole grab in current.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/23/10 **SAMPLER NAME(S):** IC Davis

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☒Partly Cloudy ☒Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other: some sun peaking thru

Weather past two days: Monday - Sunny 80
Tuesday cloudy 80 some sun in AM, some evening showers

Was the rain ☒ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
Medina Boat R	MAC3	10:00A	24.0	23.5	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

pole grab in current

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other
(describe): very slight tint.

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other
(describe):

Any floating debris? NO
(describe):

Comments: small minnow/fish observed.

delivered sample 10:20A NWW CP Lab

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/30/10 **SAMPLER NAME(S):** IC Davies

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Monday – sunny HOT warm – over 90 Humid
Tuesday – sun/clouds – HOT/warm – 80s Humid

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Medina Boat Ramp	MRC 3	9:48	18.75	24.0	cloudy	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

pole grab in current.

Color and odor codes:

H_20 color: clear, (cloudy), muddy, green, brown, t ea colored, ir = iridescent, other (describe): water slightly turbid.

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other (describe):

delivered @ 10:12 AM to HWTP

Any floating debris?
(describe):

Comments: River level up – some debris along edge. small fish/minnows @ ramp

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7/7/10 **SAMPLER NAME(S):** IC Davies

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ☒Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: Sunny - Hot 90° no rain

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Medina Boat Ramp	MAC3	9:50A	28.5	26.5	clear	none KP

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

pole grab in current

delivered 7/7/10 10:10 AM

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe):

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other (describe):

Any floating debris? (describe): some oily patches along edge

Comments: River level lowest so far
small fish visible in river 2"-3"

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: JULY 14 . 10 **SAMPLER NAME(S):** BRIAN MARKEY

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☑Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
HAZY HOT HUMID. RAIN OVER NIGHT INTO JULY 14TH.

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
DAVITT BRIDGE	MAC2	6:40A	26	26	CLEAR	NONE
MEDINA STREET	MAC3	7:10A	26	27	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

DAVITT (describe): CLEAR TO ABOUT 2FT DEEP. ~~SOME FOAM ON TOP~~
MEDINA CLEAR

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other

DAVITT (describe): NONE
MEDINA NONE

Any floating debris?
(describe): DAVITT: SOME FOAM ON TOP. SILVER DOLLAR SIZE
MEDINA: LOOKS LIKE OIL FLOATING ON SURFACE
A FEW TWIGS & ORGANIC MATTER

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: JULY 21 2010 **SAMPLER NAME(S):** BRIAN MARKEY

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
DAVITT BRIDGE	MAC 2	8 40	21	26	CLEAR	none
MEDINA ST	MAC 3	9 00	21	26	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_2O color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe): CLEAR AT BOTH SITES

H_2O odor: (none), rotten egg, gasoline, sewage, detergent, fish, other (describe):

Any floating debris?
(describe): NONE AT DAVITT
SMALL ORGANIC MATTER AT MEDINA

Comments:

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7/28/10 **SAMPLER NAME(S):** K Davis

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: sunny, warm high 80s

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Medium A boat	MAC 3	9:40A	23.0	25.5	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

pole grab

delivered 10:05 AM HWTP

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

COC Form OK

Any floating debris? NO
(describe):_____

Comments: River level low
muscle shells on bottom
white egret on opposite shore?

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/4/10 **SAMPLER NAME(S):** K Dann

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ☒Overcast ☒Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: sun/clouds low 80s no rain

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Medina Boat Ramp	MRC3	9:45A	25.0	24.0	None	None

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Delivered 10:05 AM

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris? NO
(describe):_____

Comments: River level lowest so far

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/11/10 **SAMPLER NAME(S):** K Davies

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Hot - Humid High 80s

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Medina Boat R	MAC 3	9:43A	24°C	26°	clear	None

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes: pole grab // 10:00 delivered AM

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other
(describe):

Any floating debris? NO
(describe):

Comments: River level low muscle shells present. breezy – ripples on surface.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/18/10 **SAMPLER NAME(S):** K Davis

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☐Overcast ☑Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Mon - some rain, Tue - sunny > second hand info

Was the rain ☐ light, ☐moderate, or ☐heavy? moderate

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Medina Boat Ramp	MAC 3	9:52	22	24.5	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Delivered 10:12A

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris? NO
(describe):_____

Comments: small fish evident / school – some jumping

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/25/10 **SAMPLER NAME(S):** JC Davies

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ☒Cloudy ☒Drizzle ❑Raining ❑Other:

occasional

Weather past two days: Sunday - Rain
Monday - Drizzle - slight
Tuesday - cloudy - drizzle - slight

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Medina Boat	MAC3	9:55	19.5	22.5	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

delivered 10:20AM

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe):

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other (describe):

Any floating debris? NO (describe):

Comments: flycatchers swooping all about.
River level up a bit.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/1/10 **SAMPLER NAME(S):** K Davies

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: sunny, Hot 90s

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Medina Boat Ramp	MAC3	9:51A	24.5	25.5	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

pole grab in open area
weeds present as before.

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other
(describe):

Any floating debris? NO
(describe):

delivered 10:10A

Comments: level low.
small fish hitting surface

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/8/10 **SAMPLER NAME(S):** K Davis

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☒Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Monday - Sunny / Light rain last night
Tuesday - Sunny

Was the rain ☒ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Medina Boat R	MAC 3	9:52A	23.75	23.5	clear	None

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

delivered 10:13 AM

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris? NO
(describe):_____

Comments: River low

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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adonlon@ctriver.org

DATE: 9/15/10 **SAMPLER NAME(S):** K Davis

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other: few clouds

Weather past two days: Mon Tue Sunny 70s clear no rain

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
Medina Boat Ramp	MAC3	9:47A	14.0	20.0	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Delivered 10:07 @ office

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe):

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other (describe):

Any floating debris? NO
(describe):

Comments: River level low - lowest so far?

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/22/10 **SAMPLER NAME(S):** K Davis

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ☒Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: Sunny 70s

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Medium Boat Ramp	MAC3	9:53AM	20.0	19.5	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

delivered 10:14 AM

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe):_____

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other (describe):_____

Any floating debris? No
(describe):_____

Comments: River level low

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/29/10 **SAMPLER NAME(S):** Patty Gaukaurin

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: rain

Was the rain ☐ light, ☐moderate, or ☒heavy? @ times

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Paint	MAC2	7:40am	20°	18°	clear	Moldy
Medina	MAC3	7:55	20	18	tea	Moldy

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): no

Comments: lots of trash @ both locations,

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/29/10 **SAMPLER NAME(S):** K Davis

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Rainy

Was the rain ☒light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Medina Boat Ramp	MAC 3	9:55A	21.0	20.5	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

10:20AM Del

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe):

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other (describe):

Any floating debris? None (describe):

Comments: level low
one rower on river

white egret observed?
small fish hitting water surface
water bugs on surface.

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 10/6/10 **SAMPLER NAME(S):** Patty Gambarrini

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☒Raining
☐Other:

Weather past two days: rain overnight, overcast yesterday

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
Dam St Bridge	MAC2	9:05	14°	16°	muddy	none
Medina St.	MAC3	9:20	14°	16°	muddy	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments: Chicopee River high flows @ Dam St
lots of mud washed onto ramp @ Medina St.
high flow

CT RIVER MONITORING

SITE LOCATION SHEET

Site Name: Berchulski Fisherman Access

Site Number: MAC4

Street Address/Town: ~~South Hadley~~ Chicopee

Nearest major highway: Route 116

Road names and/or numbers connecting major highway to the site access road: Main Street in the Falls Section of South Hadley (turns into Syrek Street as head south)

Specific directions from access road (named above) to exact location of sampling site: From Route 116 in the Falls Section of South Hadley, take South Main Street south for .2 miles, passing Beachgrounds Park on your right and Smith Street on your left. Look on right for driveway into Fisherman Access site. Follow driveway down to beach and park car. Sample from end of concrete boat launch.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/2/10 **SAMPLER NAME(S):** David Webber

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Some Rain

Was the rain ☐ light, ☑moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Borchulski	MAC 4	8:00	20	24	tea	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): Duck feathers

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/9/10 **SAMPLER NAME(S):** David Webber

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☑Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Showers/Sun

Was the rain ☑ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Berchulski	MAC4	7:00	12			
				22	clear	

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear) cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):

H_20 odor: none, rotten egg, gasoline, sewage, detergent, (fish) other mild fish odor
(describe):

Any floating debris? sticks
(describe):

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/16/10 **SAMPLER NAME(S):** David Webber

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☑Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: clear + sunny

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Borchulski	MAC 4	7:45	17	20	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe):_____

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other (describe):_____

Any floating debris? dust, pollen (describe):_____

Comments: fish surface feeding

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

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adonlon@ctriver.org

DATE: 6 / 23 / 10 **SAMPLER NAME(S):** Webber

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☑Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Rain

Was the rain ☑ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Borchelski	MAC4	7:45	25	24	clear	fish

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe):

H_20 odor: none, rotten egg, gasoline, sewage, detergent, (fish), other (describe):

Any floating debris? (describe): fish & pollen

Comments:

Applied Montague

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
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DATE: 6/30/10 **SAMPLER NAME(S):** David Webber

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Sunny & warm

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
Berchulski	MAC 4		22	21		

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear,) cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: (none,) rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris? pollen, bugs
(describe):_____

Comments: beautiful day. Canoers putting in water

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7/14/10 **SAMPLER NAME(S):** Patty Gambaccini

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☒Raining
☐Other:

Weather past two days: clear

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Beckwith	MAC4	9:10	24	27	tea	swampy
HQC	HQC					
Jones Ferry	MAH3	9:30	24	27	tea	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments: Beckwith - dead crayfish
Jones Ferry - oil sheen, brown swirls, along dock. oil at ramp

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: July 21, 2010 **SAMPLER NAME(S):** Patty Gambaccini

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ☒Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining
❑Other:

Weather past two days:
past 24 hrs no rain ; did have rain 2 nights ago

Was the rain ❑ light, ☒moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Brunelle's Marina	MAH4	8:20	24	27		
HQC	HQC	8:20	24	27	clear	none
Berchulski	MAC4	8:35	24	27	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): no @ Brunelle's
@ Berchulski oil at places along shore

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7/28/10 **SAMPLER NAME(S):** David Webber

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Sunny & Warm

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Berkshire	MAC4	7:47AM	22			

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_2O color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe):

H_2O odor: (none), rotten egg, gasoline, sewage, detergent, fish, other (describe):

Any floating debris? No
(describe):

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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adonlon@ctriver.org

DATE: 8/4/10 **SAMPLER NAME(S):** David Webber

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ☑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: Dry / Hot / Humid

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
MAC4 / Borchelski		8:15 AM	25			

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris? None
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/11/10 **SAMPLER NAME(S):** David Wobbor

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☑Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Dry, warm

Was the rain ☐ light, ☐moderate, or ☐heavy? N/A

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Brochulski	MAC4	8:10	24	26	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):

Any floating debris? Dust, pollen
(describe):

Comments: Water level low
Lots of Canada geese in water

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/18/10 **SAMPLER NAME(S):** DKW

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☑Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: T-storm

Was the rain ☐ light, ☑moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Borchulski	MAC4	8:15AM	20	25	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe):

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other (describe):

Any floating debris? (describe): minimal

Comments: Awesome rainbow/sunlog!

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/25/10 **SAMPLER NAME(S):** David Webber

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☑Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Rainy

Was the rain ☐ light, ☑moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Berchick	MAC 4	7:50	18	21	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear,) cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe):

H_20 odor: (none,) rotten egg, gasoline, sewage, detergent, fish, other (describe):

Any floating debris? plant matter (describe):

Comments: Skunk nearby, can't tell odor

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/1/10 **SAMPLER NAME(S):** Patty Gambarini

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining
❑Other:

Weather past two days: clear, no rain, hot

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Berchulski	MAC4	8:25	25°	24°	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): leaves, sticks, some particulate matter

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/8/10 **SAMPLER NAME(S):** Webber

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☑Drizzle ☐Raining ☐Other:

Weather past two days: Dry + Sunny

Was the rain ☑light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Berchulski	MAC4	7:10 AM		34	clear	clear

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe):

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other (describe):

Any floating debris? dust, plant matter (describe):

Comments: water too low - not moving @ base of boat ramp (sampled anyway)

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/15/10 **SAMPLER NAME(S):** Anne CpR

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: some rain

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
MACH	Berkshi	8:16	16	19		
HQC	MACH	8:16	16	19	clear	none
					clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/22/10 **SAMPLER NAME(S):** David Webber

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Sunny

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Borchulski						
	Mar 4	7:45AM	17	20	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris? None
(describe):_____

Comments: Breezy & cool today

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7/28 **SAMPLER NAME(S):** David Welber

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☑Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Rain

Was the rain ☐ light, ☐moderate, or ☑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Berchelski	MAC4	7:50 AM	20	20	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear) cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris? dust & small particles
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 10/5/10 **SAMPLER NAME(S):** Webber

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ☑Raining ❑Other:

Weather past two days: Rain

Was the rain ❑ light, ❑moderate, or ☑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Beach Rock	MA C4	7:20AM	18	19	muddy	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): raining

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):

Any floating debris? no
(describe):

Comments: River very high

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/2/2010 **SAMPLER NAME(S):** Beckie Finn

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☑Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
Clear then Rain

Was the rain ☐ light, ☐moderate, or ☒heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Barton Cove	MA64	6:15 AM	65°F	74°F	brown	—

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): no

Comments: some Goose droppings on Ramp

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/9/2010 **SAMPLER NAME(S):** Beccie FINN

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ☒Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
Clear & Partly Cloudy, cool

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °F	H_2O °F	H_2O Color (see codes below)	H_2O Odor (see codes below)
Barton Cove	MA64	6:08 PM	52	72	Tea/Clear	—

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, tea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments: Yellow Perch & Large Snails

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/16/2010 **SAMPLER NAME(S):** Becky Finn

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
Clear / Drizzle / cloudy

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Barton Cove	MHG4	6:15am	59°F	70°F	Tea	—

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/16/10 **SAMPLER NAME(S):** Beckie Finn

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Partly Cloudy, Slight Drizzle

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C F	H_2O °C F	H_2O Color (see codes below)	H_2O Odor (see codes below)
Barton Cove	MAG4	6:15AM	57	69	brown	—

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): brown, visibility good Though

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):

Any floating debris?
(describe): dead crayfish (large)
2 ducks

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/23/10 **SAMPLER NAME(S):** Beckie Finn

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ☑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
Clear then heavy rain last night

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C~~F~~	H_2O °C~~F~~	H_2O Color (see codes below)	H_2O Odor (see codes below)
Barton Cove	MAG4	6:15pm	71	79	Tea	

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments: Geese near area where boats are tied out (docking area)

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/30/16 **SAMPLER NAME(S):** Beckie Finn

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
Overcast, hot, humid

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Barton Cove	MAG4	6:15pm	58	79	clear/tea	Slight Fish (Fresh)

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments: goose poop, snails
Swan. Geese on other side of.
Snow fencing near boat moorings

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7/7/10 **SAMPLER NAME(S):** Beckie Finn

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ☒Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
Hot & Dry

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Barton Cove	MAG 4	6:15 AM	61	84	Tea/clay	—

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7/14/10 **SAMPLER NAME(S):** Beckie Finn

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☒Drizzle ☐Raining ☐Other:

Weather past two days:
Clear, hot then rain overnight

Was the rain ☒ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
~~AAA~~ Barton Cove	MAG4	6:15 ~~pm~~	24	27	Tea	—

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7/21/10 **SAMPLER NAME(S):** Beckie Finn

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ☒Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: Clear / Brief Heavy Rain

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Barton Cove	MA64	6:15pm	18	28	Tea	

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): Cloudy / turbid

Fish, Geese

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):

Any floating debris?
(describe):

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7/28/10 **SAMPLER NAME(S):** Beckie Finn

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
Clear

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Barton Cove	MAG4	6:15pm	16	26	Tea/clay	
DC		11				

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments: Perch

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/4/10 **SAMPLER NAME(S):** Becky Emm

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☑Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Barton Cove	MAG4	6:25 am	22	25	Slightly Cloudy	—

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, (cloudy), muddy, green, brown, t ea colored, ir = iridescent, other (Slightly)

(describe):

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):

Any floating debris?
(describe):

Comments: Ducks!

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/11/10 **SAMPLER NAME(S):** Beckie Finn

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☒Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
Partly cloudy, some Rain

Was the rain ☒ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Banton cove	MAG4	6:45pm	18	26	Clear/tc	Detergent

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, (detergent) fish, other
(describe):_____

Any floating debris?
(describe): Ducks (2)

Comments:

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

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acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/18/10 **SAMPLER NAME(S):** Beckie Finn

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☑Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: clear / some drizzle.

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Bantom Cove	MAG4	5 AM	14	26	Tea	Slight Fish

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/8/10 **SAMPLER NAME(S):** Beckie Finn

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☒Drizzle ☐Raining ☐Other:

Weather past two days: clear

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Barton Cove	MAG4	6:15pm				

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):

Any floating debris?
(describe):

Comments: Ducks @ Boat launch area

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/15/10 **SAMPLER NAME(S):** Beckie Finn

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
overcast

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Barton Cove	MA64	5:00am	10	19	—	—

Dark out

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/22/10 **SAMPLER NAME(S):** Beccie Finn

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: clear, cool

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Barton Cove	MAG4	6:15pm	13	19	tea	—

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments: perch

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/29/10 **SAMPLER NAME(S):** Beckie Finn

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: Rain

Was the rain ❑ light, ☒moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Barton Cove	MAG4	6PM	22°	20	-	—
QC	MAGQC					

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Ran out of C.O.C. Forms

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/29/10 **SAMPLER NAME(S):** Beckie Finn

Beckie: Drop off 7AM 9/29/AM

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Barton Cove	MRG4	6:00AM				
QC	QC	6:00AM				

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):

Any floating debris?
(describe):

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 10/6/10 **SAMPLER NAME(S):** Beckie Finn

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☒Drizzle ☐Raining ☐Other:

Weather past two days: Drizzle/rain

Was the rain ☐ light, ☒moderate, or ☒heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Barton Cove	MA64	6:15	16	14		

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris? Reeds, feathers
(describe):_____

Comments: Water level extremely low. Never seen it that low. came to near Bottom of Boat ramp

CT RIVER MONITORING

SITE LOCATION SHEET

Site Name: Pioneer Valley Yacht Club

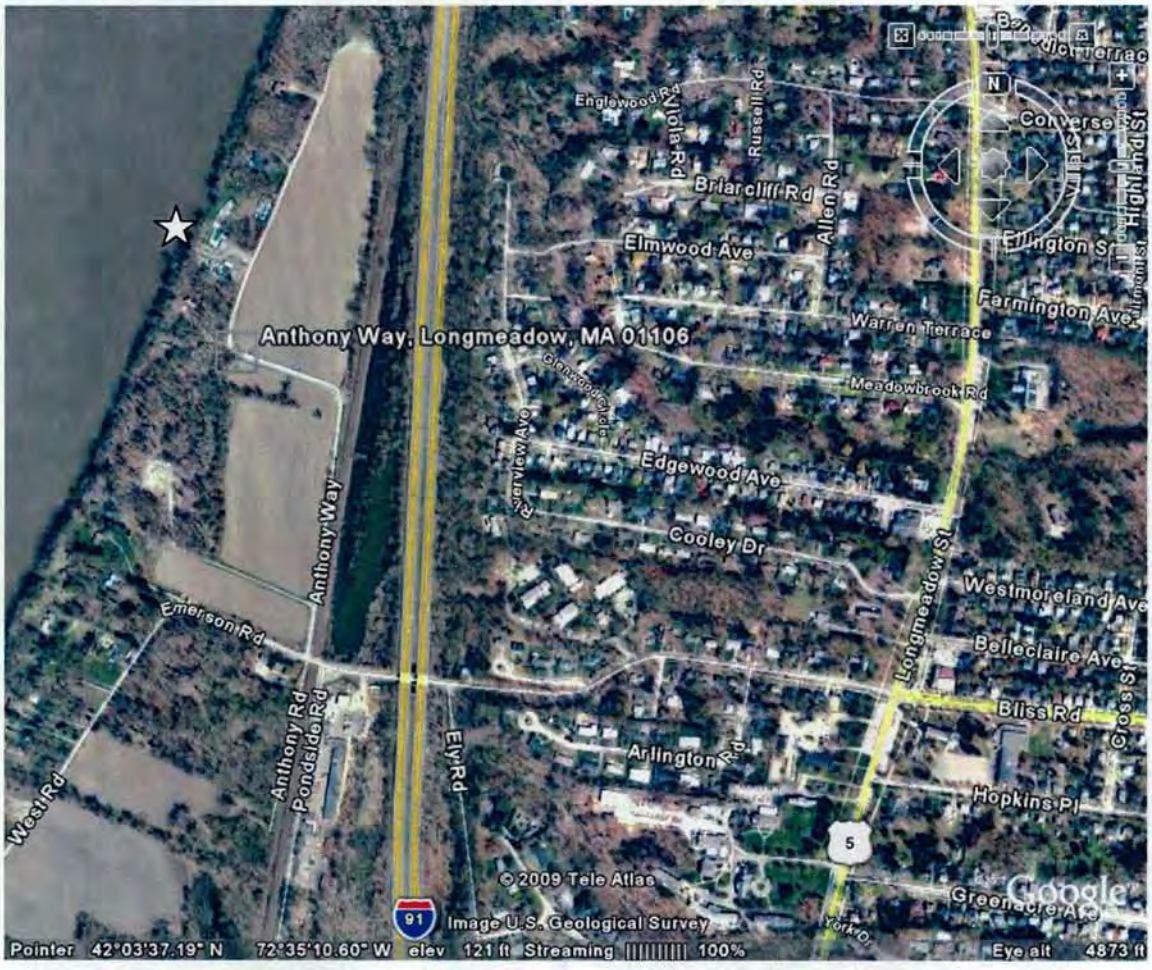
Site Number: MAH1

Street Address/Town: 200 Anthony Way, Longmeadow

Nearest major highway: Route 5/Longmeadow Street

Road names and/or numbers connecting major highway to the site access road: Emerson Road

Specific directions from access road (named above) to exact location of sampling site: Take Emerson Road to west toward river. Just after passing under I-91 overpass, take right onto Anthony Way. Follow Anthony Way for about .5 mile. Yacht Club will be on your left. Take sample at end of boat ramp.



Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419 acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020 adonlon@ctriver.org

DATE: ~~2/6/2010~~ 6/2/2010 **SAMPLER NAME(S):** DON CAMPBELL

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ■Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
HOT, HUMID, SEVERE THUNDERSHOWERS

Was the rain ❑ light, ❑moderate, or ■heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
PV YACHT CLUB	MAH 1	9:00 AM	20.5	22.5	CLEAR	NONE
	HQC					

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): CLEAR WITH ORGANIC DEBRIS (TWIGS, SEEDS, POLLEN)

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):

Any floating debris?
(describe): POLLEN, TWIGS, PLANT DEBRIS

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6-9-10 **SAMPLER NAME(S):** K. Lovell

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☑Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: clear

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
PVYC	MAH1	8:55 am	18	21	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe): clear, green

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other (describe): none

Any floating debris?
(describe): none

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/16/2010 **SAMPLER NAME(S):** DON CAMPBELL

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☒Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
CLEAR, SUNNY

Was the rain ☒light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
PV YACHT CLUB	MAH 1	8:15	19	19.5	CLEAR	NONE
	~~HQC~~ DC					

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): CLEAR

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): NONE

Any floating debris?
(describe): INSECT, FLOWER, TWIGS

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6-23-10 **SAMPLER NAME(S):** K. Lovell

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ☒Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
Partly cloudy - rain last night

Was the rain ❑ light, ☒moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
PVYC	MAH1	840	25	23	tea	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): tea colored

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): no

Any floating debris?
(describe): no

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/30/2010 **SAMPLER NAME(S):** DON CAMPBELL

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
HOT HUMID TODAY: CLEAR, DRY, WINDY

Was the rain ☒ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
AV YACHT CLUB	MAH 1	8:15A	17.5	24	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): CLEAR

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): NONE

Any floating debris?
(describe): NONE

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7-7-10 **SAMPLER NAME(S):** K. Lovell

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ☒Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: Extremely hot

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
PVYC	MAHI	855	28	26	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): Clear

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): none

Any floating debris?
(describe):

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7-14-10 **SAMPLER NAME(S):** DON CAMPBELL

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ☒Cloudy ❑Drizzle ☒Raining
❑Other:

Weather past two days:
HOT, HUMID

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
PVPC	MAH 1	8:45A	24	27	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): VERY HIGH VISIBILITY

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): NO DISTINCT ODOR

Any floating debris?
(describe): NONE

Comments:

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7-21-10 **SAMPLER NAME(S):** K. Lovell

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Partly cloudy

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
PVPC	MAH1	940	25	27	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): Lots of fish easily seen low H20 level

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7-28-10 **SAMPLER NAME(S):** K. Lovell

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
hot clear and dry

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
PVYC	MAH1	925				

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/4/2010 **SAMPLER NAME(S):** DON CAMPBELL

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ☒Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
HOT, DRY, CLEAR

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
PVPC	MAH1	9:55A	27	25.5	CLEAR	NONE
PVPC	DUP	9:55A	27	25.5	"	"

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear,) cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: (none,) rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 08/11/'10 **SAMPLER NAME(S):** DON CAMPBELL

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☒Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
HOT (90°F), HUMID, THUNDERSTORM 8/9/'10

Was the rain ☐ light, ☒moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
PVPC	MAM1	8:45A	25°	26°	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): CLEAR

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): NONE

Any floating debris?
(describe): NONE

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8-18-10 **SAMPLER NAME(S):** K. Lovell

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
clear hot

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
PVYC	MA171	7'5	18	25	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/25/10 **SAMPLER NAME(S):** DON CAMPBELL

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ☒Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
CLOUDY, RAINY, WINDY

Was the rain ❑ light, ❑moderate, or ☒heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
PVPC	MAH 1	8:15A	20	21	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): CLEAR, COLORLESS

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): NONE

Any floating debris?
(describe): NONE

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9-1-10 **SAMPLER NAME(S):** K. Lovell

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: hot, dry

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
PVYC	MAH1	1125	23	25	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe): clear

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other (describe): none

Any floating debris?
(describe):

Comments:

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

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acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/8/10 **SAMPLER NAME(S):** Patty Gambarini

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ☒Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
sunny yesterday; rain overnight

Was the rain ❑ light, ☒moderate, or ❑heavy? @times

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
PVYacht Club	MAH1	8:25	24°	23°	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe): incredibly clear can see many shells on bottom

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other (describe): none

Any floating debris?
(describe): none

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9-15-10 **SAMPLER NAME(S):** K. Lovell

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ☒Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: dry

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
PVYC	MAH1	930	15	18	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe): clear

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other (describe): none

Any floating debris? (describe): grass

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020 adonlon@ctriver.org

DATE: 9/22/10 **SAMPLER NAME(S):** DON CAMPBELL

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
WARM, CLEAR, DRY, WINDY

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
PVPC	MAH 1	8:15A	18°C	19°C	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): CLEAR

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): NONE

Any floating debris?
(describe): NONE

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9.29-10 **SAMPLER NAME(S):** K. Lovell

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
rain moderate.

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
PVVC	MAH1	940	22	20	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 10/6/10 **SAMPLER NAME(S):** DON CAMPBELL

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ☒Raining ❑Other:

Weather past two days:
RAINING

Was the rain ❑ light, ☒moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
PVPC	MAH-1	7:30A	13.5	15.5	CLOUDY	NONE
PVPC	DUP	7:30A	13.5	15.5	CLOUDY	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): CLOUDY, MUDDY

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): NONE

Any floating debris?
(describe): GAS/OIL, STORM DEBRIS

Comments:

CT RIVER MONITORING

SITE LOCATION SHEET

Site Name: Pynchon Point Park

Site Number: MAH2

Street Address/Town: Agawam

Nearest major highway: Routes 5 and 57 at Agawam Rotary

Road names and/or numbers connecting major highway to the site access road: South End Bridge Circle located off Agawam Rotary just past Kitchens by Herzenberg

Specific directions from access road (named above) to exact location of sampling site: Take South End Bridge Circle for a short distance. Just past pedestrian crosswalk, take left into Pynchon Point parking lot. Park in lot and walk down paved walkway to river. Take sample at end of walkway.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 06/07/10 **SAMPLER NAME(S):** Tom & Pat Marco

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☒Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
Sunny Rain

Was the rain ☐ light, ☐moderate, or ☑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Rynchon Point Park	MAH2	7:10 AM	26	22	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear) cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: (none) rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): None

Comments: sunny morning, slight river fog
3 fisherman no luck as yet

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 06/09/10 **SAMPLER NAME(S):** Tom & Pat Marco

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
Rain Sunny

Was the rain ❑ light, ☑ moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Rainbow Point Park Agawam	MAH2	7:35	16	18	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): NONE.

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6-16-10 **SAMPLER NAME(S):** Tom & Pat Marco

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☑Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
Sunny Rain

Was the rain ☐ light, ☑moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Ryckman Park Point	MAH2	8:15AM	18	18	CLEAR	Rotten egg

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, (rotten egg), gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): NONE

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 06/23/10 **SAMPLER NAME(S):** Tom & Pat Marco

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
past two days steady, some rain @ night

Was the rain ☐ light, ☑moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Rainbow Point Park	MHH2	8:15	25°	23°	clear	None

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear,) cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): None

Comments: Water level low

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 06/30/10 **SAMPLER NAME(S):** Tom & Pat MARCO

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☑Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Warm Dry humid some rain

Was the rain ☑light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Rynchon Point PARK	MAH2	7:59AM	21°	24°	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear,) cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: (none,) rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 07/07/10 **SAMPLER NAME(S):** TOM & PAT MARCO

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Extremely Hot last 3 days! 95° to 1105°

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Rycken Point Park	MAH2	7:45AM	28°	27°	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear) cloudy, muddy, green, brown, t ea colored, ir = iridescent, other
(describe): CLEAR

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): NONE

Any floating debris?
(describe): NONE

Comments:
River very low. very hot temps for last few days 95° to 102°

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 07/14/10 **SAMPLER NAME(S):** TOM + PAT MARCO

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☑Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
Hot Very dry

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
RAINBOW BARE POINT	MAH2	7:30AM	26°	25°	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear) cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: (none) rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): None

Comments:
River very low

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 07/21/10 **SAMPLER NAME(S):** Tom & Pat Marco

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Sunny hot and humid.

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Pynchon Point Park	MAHR	7:15	24°	26°	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe): CLEAR

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other (describe): NONE

Any floating debris? (describe): NONE

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 07/28/10 **SAMPLER NAME(S):** TOM + PAT MARCO

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: Hot Humid Severe Thunder Storm Lot of Rain

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
Pynchon Point Park	MAH2	7:05AM	22°	25°	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear), cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): None

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 08/04/10 **SAMPLER NAME(S):** TOM & PAT MARCH

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☑Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Hot and humid ~~same~~

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Gyuchon Point Park	MAH2	8:30	25°	24	Clear	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe): Clear

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other (describe): NONE

Any floating debris? (describe): None

Comments: Water very low.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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adonlon@ctriver.org

DATE: 08/11/2010 **SAMPLER NAME(S):** Tom & Pat Marco

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☑Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Hot and humid very heavy rain 8/10

Was the rain ☐ light, ☐moderate, or ☑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Rynchaw Rive Bank	MAH2 7:	7:35	24°	25½	Clear	None

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe): Clear

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other (describe): None

Any floating debris? (describe): None

Comments: Water very low.

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 08/18/2010 **SAMPLER NAME(S):** TOM & PAT (MARCH)

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☐Overcast ☑Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
Hot humid, some rain

Was the rain ☐ light, ☐moderate, or ☑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Rynes Low Point Park	MAH2	8:35 AM	20			

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe):

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other (describe):

Any floating debris? (describe): NONE

Comments: River very Low

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 08/25/2010 **SAMPLER NAME(S):** Tom's Pat MARCO

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☑Drizzle ☐Raining ☐Other:

Weather past two days:
Rain light to heavy

Was the rain ☑ light, ☑ moderate, or ☑ heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Poncho Point Park	MAH2	7:05	20°	18°	Clear	None

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: (clear,) cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: (none,) rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): Plastic Bottles

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 09/01/2010 **SAMPLER NAME(S):** TOM & PAT MARCO

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: very hot

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Ryckson Point Park	MAH2	7:48	25°	24°	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe): CLEAR

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other (describe): NONE

Any floating debris? (describe): Small tree Limbs, Leaves.

Comments:
River still very low

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 09/08/2010 **SAMPLER NAME(S):** TOM & PAT MARCH

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
RIVERSIDE POINT PARK	MAH2	9:10	25C	24C	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe): CLEAR

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other (describe): NONE

Any floating debris? (describe): NONE

Comments: Water Very Low

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

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adonlon@ctriver.org

DATE: 09/15/2010 **SAMPLER NAME(S):** Tom & Pat MARCO.

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining
☐Other:

Weather past two days:
Sunny & clear

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Ponchon Point Park	MAH2	7:35	18C	20C	Clear	None

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): CLEAR

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): NONE

Any floating debris?
(describe): NONE

Comments:

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 09/22/2010 **SAMPLER NAME(S):** Tom & Pat Marco

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
Sunny warm

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Rainbow Park Point	MAHD	8:28	21c	19c	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other (describe): CLEAR

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other (describe): NONE

Any floating debris? (describe): NONE

Comments:

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

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adonlon@ctriver.org

DATE: 09/09/2010 **SAMPLER NAME(S):** Tom & Pat Marco

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☒Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining
☐Other:

Weather past two days: Rain & Warm

Was the rain ☐ light, ☐moderate, or ☒heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Pynchon Park, Point	MAH2	7:15AM	23°	20°		

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): Clear

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): None

Any floating debris?
(describe): None

Comments:

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

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DATE: 7/06/2010 **SAMPLER NAME(S):** TOM & PAT MARCO

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☑Raining
☐Other:

Weather past two days:
Rain, Heavy

Was the rain ☐ light, ☐moderate, or ☑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Ranch's Point Park	MAH2	7:50	15°	14°	Cloudy	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, (cloudy), muddy, green, brown, t ea colored, ir = iridescent, other (describe): from heavy Rain

H_20 odor: (none), rotten egg, gasoline, sewage, detergent, fish, other (describe):

Any floating debris?
(describe): none

Comments: River water line up to tree line.

CT RIVER MONITORING

SITE LOCATION SHEET

Site Name: Jones Ferry Boat Launch

Site Number: MAH3

Street Address/Town: Holyoke

Nearest major highway: Route 5/Ingleside Street

Road names and/or numbers connecting major highway to the site access road: Jones Ferry Road

Specific directions from access road (named above) to exact location of sampling site: Take Jones Ferry Road down hill, across Main Street. Continue toward river, passing Nuestras Raices Farm on your right. Take left into parking lot. Proceed toward boat ramp and park on the right. Take sample at base of boat ramp.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6-2-10 **SAMPLER NAME(S):** JON ERICKSON

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining
❑Other:

Weather past two days:
HOT + SUNNY / RAIN

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
JONES FERRY	MAH 3	7:15 AM.	71°	76° F	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 06/09/10 **SAMPLER NAME(S):** JOV ERICKSON

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☑Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Sunny with occasional rain

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
JONES FERRY	MAH3	7:25AM	62°F	74°F	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): Clear

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe): None

Any floating debris?
(describe): lots - sticks foam dead fish & eels

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 06/16/10 **SAMPLER NAME(S):** JOY ERICKSON

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
RAIN / SUNNY

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
JONES FERRY	MAH3	9:20AM	68°F	72°F	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): FOAM

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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DATE: 6-23-10 **SAMPLER NAME(S):** JOY ERICKSON

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ☒Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: PARTLY SUNNY / PARTLY RAINY

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
JONES FERRY	MAH_3	10:00 AM	84°F	78°F	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): FOAM

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6-30-10 **SAMPLER NAME(S):** JOY ERICKSON

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
HOT, SUNNY

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
JONES FERRY	MAH 3	7:20AM	65° F	80° F	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): STICKS, LEAVES, SCUM

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7-7-10 **SAMPLER NAME(S):** JOY ERICKSON

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
HOT, SUNNY

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
JONES FERRY	MAH 3 HQC	7:25AM	80°F	84°F	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): FOAM

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7/14/10 **SAMPLER NAME(S):** Patty Gambaiani

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ☒Raining
❑Other:

Weather past two days: clear

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Berchtstn	MAC4	9:10	24	27	tea	shrimpy
HQC	HQC					
Jones Ferry	MAH3	9:30	24	27	tea	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments: Berchtstn - dead crayfish
Jones Ferry - oil sheen, brown scum along dock. oil & ramp

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7-21-10 **SAMPLER NAME(S):** JOY ERICKSON

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☒Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
HOT, SUNNY, RAIN 7/19 P.M

Was the rain ☐ light, ☐moderate, or ☒heavy? - SHORT TIME

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
JONES FERRY	MA#3	7:20AM	77°F	84°F	clear	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): No

Comments:

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

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adonlon@ctriver.org

DATE: 7-28-10 **SAMPLER NAME(S):** JOY ERICKSON

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: HOT + SUNNY

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
JONES FERRY	MAH3	8:05	76°F	82°	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): FOAM, WEEDS

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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adonlon@ctriver.org

DATE: 8-4-10 **SAMPLER NAME(S):** JOY ERICKSON

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ☒Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: HOT, SUN, SOME CLOUDS

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
JONES FERRY	MAH3	7:15 AM	78°F	82°	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): NONE

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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adonlon@ctriver.org

DATE: 8-11-10 **SAMPLER NAME(S):** JOY ERICKSON

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
HOT CLOUDY/SUNNY RAIN

Was the rain ❑ light, ☒ moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
JONES FERRY	MAH-3	9:25AM	78°F.	82°F	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): No

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8-18-10 **SAMPLER NAME(S):** JOY ERICKSON

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: HOT, SUN/CLOUDY, RAIN, OVERCAST

Was the rain ❑ light, ❑moderate, or ☒heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
JONES FERRY	MAH 3	7:20 AM	70° F	80° F		

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/25/10 **SAMPLER NAME(S):** JON ERICKSON

WEATHER OBSERVATIONS (check appropriate boxes);
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ☒Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
CLOUDY WITH RAIN

Was the rain ❑ light, ☒moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
JONES FERRY	MAH3	10:08	65°F	74°F	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): NONE

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/1/10 **SAMPLER NAME(S):** JOY ERICKSON

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
HOT + SUNNY

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
JONES FERRY	MAH3	945 AM	84 F	79°F	cloudy	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/8/10 **SAMPLER NAME(S):** JOY ERICKSON

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☒Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: HOT, PARTLY SUNNY, RAIN

Was the rain ☒light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
JONES FERRY	MAH3	8:40AM	76°F	78°F	Clear	NONE
	HQC					

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9-15-10 **SAMPLER NAME(S):** JOY ERICKSON

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
WARM, PARTLY CLOUDY, WINDY

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
JONES FERRY	MAH3	10:03AM	70°F	72° F.	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe): C

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):

Any floating debris?
(describe): NO

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 · Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 9/22/10 **SAMPLER NAME(S):** JOY ERICKSON

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☒Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
SUN, WINDY, P. CLOUDY

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
JONES FERRY	MAH 3	8:25 AM	70°F.	70° F	CLEAR	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 10-06-10 **SAMPLER NAME(S):** JOY ERICKSON

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ☑Raining
❑Other:

Weather past two days:
CLOUDY (1) RAIN

Was the rain ❑ light, ☑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
JONES FERRY	MAH 3	9:50AM	62°F	62°F	clear	none

→ X **For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): No

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: July 21, 2010 **SAMPLER NAME(S):** Patty Gambaccini

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☒Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
past 24 hrs no rain ; did have rain 2 nights ago

Was the rain ☐ light, ☒moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Brunelle's Marina	MAH4	8:20	24	27		
HQC	HQC	8:20	24	27	clear	none
Berchulski	MAC4	8:35	24	27	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: (none,) rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe): no @ Brunelle's
@ Berchulski oil at places along shore

Comments:

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6-21-10 **SAMPLER NAME(S):** Dan Demers

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: Partly Cloudy → Cloudy

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
	SBSH2	8:11	24	19	Clear	NONE
	SBSH4	8:39	24	18	Clear	None
	SBSH5	9:00	25	17	Clear	None
	HQC	9:00	25	17	Clear	None
	BBSH1	9:20	21	22	Brown	Sewage (strong)
	BBSH4	9:50	24	19	Clear	NONE

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6-21-10 **SAMPLER NAME(S):** Dan Demers

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: Partly Cloudy → Cloudy

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
	WBH 1	10:06	25	17	Clear	Sewage (Slight)
	WBH 3	10:20	23	15	Clear	Sewage & Fish (Strong)

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/25/10 **SAMPLER NAME(S):** Anne Capra

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
Clear, partly cloudy, scattred T-storms

Was the rain ☑light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Fort River						
Hadley + Amherst	FRH1	8:40	20	19	clear/tea	None
	HQC	8:40	20	19	tea/clear	None
	FRH7	8:19	20	20	clear	none
	Sample on down river side of bridge					
	FRH9	8:05	19	12	tea	none
	Sampled off bridge + east bound side					

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/25/10 **SAMPLER NAME(S):** Anne Capra

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
clear, partly cloudy

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Manhan River Easthampton	MRE2 downstream side	9:15 Am	21	19	tea	none
	MRE1 sampled downstream side	9:25	20	20 no visible flow	Brown/cloudy/	none
	MRE6	9:45	18	19	Brown/cloudy/	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6/25/10 **SAMPLER NAME(S):** Anne Capra

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: clear, partly cloudy, scattered T-storms

Was the rain ☑light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Mill River						
~~Hadley + Amherst~~	MRH2	6:57	22	19	brown	none, organic
	some	Lemna				
	MRH5	7:17	22	19	brown	none
	Sampled from north/west side of bridge					
	~~MRH4~~ ~~MRH3~~					
	MRH13	7:48	18	20	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments: MRH8 – break in chain link fence at back of parking lot near sign "H". Very thick vegetation. Couldn't see river. Not safe alone. Abandoned car in lot. Changed to site MRH13.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6-28-16 **SAMPLER NAME(S):** Dan Demers

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☒Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: Partly Cloudy; Drizzle in some areas

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)	
Mill	MRS 3	9:45	28°	25	Tea	Strong	Sewage
	HQC	9:45	28°	25	Tea	Strong	Sewage
	MRS 2	9:55	26	25	Tea	None	
	MRS 4	10:05	25	25	Brown	None	

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 6-28-16 **SAMPLER NAME(S):** Dan Demers

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ☒Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: Partly Cloudy; Drizzle in some Areas

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Scantic						
	SRH1	7:45	27	17	Clear	None
	SRH4	8:20	27	20	Brown	None
	SRH6	8:40	27	20	Clear	None

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
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DATE: 7-12-10 **SAMPLER NAME(S):** Dan Demers

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☒Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:
Sat: Rain Sun: Clear

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Buttery Brook	BBSH1	8:15	22	24	MUDDY	None
	BBSH4	8:30	23	22	Clear	None

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments: BBSH1: Dead Beaver, Sampled Upstream from Body

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7-12-10 **SAMPLER NAME(S):** Dan Demers

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☒Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
Sat: Rain Sun: Clear

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
Stony Brook S. Hadley	SBSH 2	7:30	22	25	Brown	None
	SBSH 4	7:45	22	26	Clear	None
	HQC	7:45	22	26	Clear	None
	SBSH 5	8:00	22	25	Cloudy	None

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

Pioneer Valley Planning Commission –60 Congress Street Springfield, MA 01104-3419
acapra@pvpc..org 413-781-6045

Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7-12-10 **SAMPLER NAME(S):** Dan Demers

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ☒Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: Sat: Rain Sun: Clear

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)	
Willamansett Brook							
	WBH 1	9:00	24	19	clear	~~none~~	Slight Gas
	WBH 3	9:10	25	16	clear	slight	Sewage and Strong Fish

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

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FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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adonlon@ctriver.org

DATE: 7-19-10 **SAMPLER NAME(S):** Dan Demers

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☒Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: dry

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name Mill River Hadley & Amherst	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
~~All~~	MRH2	8:30	21	22	Brown	~~None~~ Strong Rotten EGG
	MRH5	8:50	23	22	Cloudy	None
	HQC	9:50	25	25	clear	None
	MRH 8	9:30	25	24	Cloudy	None
	MRH 13	9:50	25	25	clear	None

same site

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments: MRH2 - Smelled only when water was disturbed
MRH6 - Sampled from newly built Bridge

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adonlon@ctriver.org

DATE: 7-19-10 **SAMPLER NAME(S):** Dan Demers

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ☒Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: dry

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Manhan River Easthampton			27			
	MRE#1	10:25	[illegible]	24	Clear	None
	MRE3	10:35	27	26	Green	None
	MRE6	10:50	27	25	Clear	None

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments: MRE3 – Large Build-up of Algea and garbage under bridge

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7-19-10 **SAMPLER NAME(S):** Dan Demers + Anne Capra

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☒Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: dry

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Fort River Hadley ~~Amherst~~						
	FRH9	7:00	20	19	Clear	None
GQC	~~HQC~~	7:00	20	19	Clear	None
	FRH 7	7:15	20	24	Tea	None
	GQC	7:15	20	24	Tea	None
	FRH 1	7:40	21	22	MUDDY	None
	GQC	7:40	21	22	MUDDY	None

Sent Split Samples to Greenfield Lab.

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:
Used pole sampler + side by side duplicate field samples.

Mill River Springfield (Rand 2)

Connecticut River 604B Monitoring Program
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E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 7/28/10 wednesday **SAMPLER NAME(S):** Anne Capra

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: dry – heavy rains on saturday.

Was the rain ☐ light, ☐moderate, or ☐heavy? 3 dry days

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
MRS4 mill River		8:28	25	24	tea	none
MRS2		8:40	21	20	tea	none - lots of trash in river, pigeons
MRS3		8:50	21	20	tea	sewage
– park on corner under construction / Road re-surfacing on Hancock St.						

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes: HQC – on main stem

H_2O color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_2O odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments: Stebbins Park under renovation. Hay bales as silt fence up along river side of park. Road at intersection + between MRS 2 + MRS3 was reclaimed + prepped for new pavement.

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/2/10 **SAMPLER NAME(S):** Day Demers

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ☒Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name Buttery Brook	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
BBSH1		8:41	Dried Up			
BBSH4		9:00	21	19	Clear	None

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):

Any floating debris?
(describe):

Comments: BBSH1 → No Water Dried Up

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 8/2/10 **SAMPLER NAME(S):** Dan Demers

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ☒Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name Stony Brook	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
SBSH 2		8:05	22	22	Cloudy	None
SBSH 4		8:20	21	24	Clear	None
SBSH 5		8:30	21	21	Muddy	None

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments: SBSH2 – Pigeons under Bridge

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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adonlon@ctriver.org

DATE: 8/2/10 **SAMPLER NAME(S):** Dan Demers

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ☒Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
~~USW~~						
WBH1		9:15	20	17	clear	None
WBH3		9:30	19	15	Clear	Slight Sewage
HQC		9:30	19	15	clear	Slight ~~Sewage~~ Sewage

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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adonlon@ctriver.org

DATE: 8/9/10 **SAMPLER NAME(S):** Anne Capra

6/25
MRE 1 2 6

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ☑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: hot, humid, dry (no rain)

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
Manhan River Easthampton						
Fort Hill Rd	MRE 1	7:35	21	21	Cloudy	none
O'Neill St	MRE 2	7:15 Am	21	21	clear	none
Glendale Rd	MRE 6	7:50	21	21	Cloudy	none

-1/9 MRE 1 3 6

very shallow

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments: MRE2 – very shallow, wide flow; could just reach water off bridge w/ 24' pole.

QC – on mainstem site

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DATE: 8/9/10 **SAMPLER NAME(S):** Anne Capra

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days: clear, 80s, low humidity

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_20 Color (see codes below)	H_2O Odor (see codes below)
Fort River – Hadley + Amherst						
RR 47 bridge	FRH1	8:15 Am	22	21	tea/muddy	none
Pelham Road	FRH9	8:50	22	20	cloudy	none
Mill Lane	FRH7	9:05	24	22	tea	none
" FRH7 "	HQC	9:05	24	22	"	"

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments: FRH7 – QC duplicate

Very shallow, broad flow; some sediment in sample from RR.

Connecticut River 604B Monitoring Program

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DATE: 8/9/10 **SAMPLER NAME(S):** Anne Capra

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:
clear, 80s, low humidity

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
Mill River Hadley + Amherst	~~MRH2~~	1				
~~Mill Site #4~~						
N. Hadley Rd	MRH5	7:~~15~~	22	22	tea	none
Meadow St	MRH12	7:25	22	22	tea	none
Mill River Rec Area	MRH13	6:40 Am	23°	23°	tea	none
					clear	

Clear at all sites

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_2O color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_2O odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:
MRH12 – north/east bound side of bridge – ground hornets nest; sample only from south/west bond side!!

Connecticut River 604B Monitoring Program
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E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 10/13/10 **SAMPLER NAME(S):** Anne Capra

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ❑Clear ❑Partly Cloudy ❑Overcast ❑Cloudy ❑Drizzle ❑Raining ❑Other:

Weather past two days:

Was the rain ❑ light, ❑moderate, or ❑heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
FRH1-upstream	Rte 47	8:50	10	10	clear	none
FRH2	Moody Bridge	8:25Am	10°	10°	clear	none – very shallow 6"-8"
FRH5	S. Maple St.	8:40	10	10	clear	none / deeper 2-4', wider flow
~~FRH1-B~~						
~~upstream~~						

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

Connecticut River 604B Monitoring Program

FIELD DATA SHEET – TIER 1 SITES

E. coli monitoring

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adonlon@ctriver.org

Monday

DATE: 10/18/10 **SAMPLER NAME(S):** Anne Capra

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☑Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days: clear

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)	
watershops Pond	MRS4	9:10	14°	11°	tea	none	
Rifle + Hancock St	MRS2	9:23	10°	10°	tea	none	lots of trash
Mill / Clay St.	MRS3	9:46	—	—	tea	none	
HQC	MRS3	9:46	—	—			

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

(describe):_____

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):_____

Any floating debris?
(describe):_____

Comments:

FRHA
B
C
QC
D
FRH2

Connecticut River 604B Monitoring Program
FIELD DATA SHEET – TIER 1 SITES
E. coli monitoring

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Connecticut River Watershed Council 15 Bank Row, Greenfield, MA 01301 . (413) 772-2020
adonlon@ctriver.org

DATE: 10/26/10 **SAMPLER NAME(S):** A. Capra

WEATHER OBSERVATIONS (check appropriate boxes):
Weather now: ☐Clear ☐Partly Cloudy ☐Overcast ☐Cloudy ☐Drizzle ☐Raining ☐Other:

Weather past two days:

Was the rain ☐ light, ☐moderate, or ☐heavy?

Site Name	Site or Sample ID*	Time	Air °C	H_2O °C	H_2O Color (see codes below)	H_2O Odor (see codes below)
FRHA		8:28	17°	12°	clear	none
FRHB	concrete culvert	8:36	17	12	clear	none
FRHC		8:46	17	12°	clear	none
GQC – B	concrete culvert	8:56	17	12	clear	none
FRHD		9:19	17°	11.5	clear	mild sewage
FRH2		9:28	17	12	clear	none

** For quality control samples for Holyoke Lab, show HQC in second column, for Connecticut River Watershed Council Lab, show CQC in second column. If not a quality control sample, list site id number in this column.*

FRHD – below pond outfall; downstream side of culvert; Behind Hampshire College Physical Plant

Color and odor codes:

H_20 color: clear, cloudy, muddy, green, brown, t ea colored, ir = iridescent, other

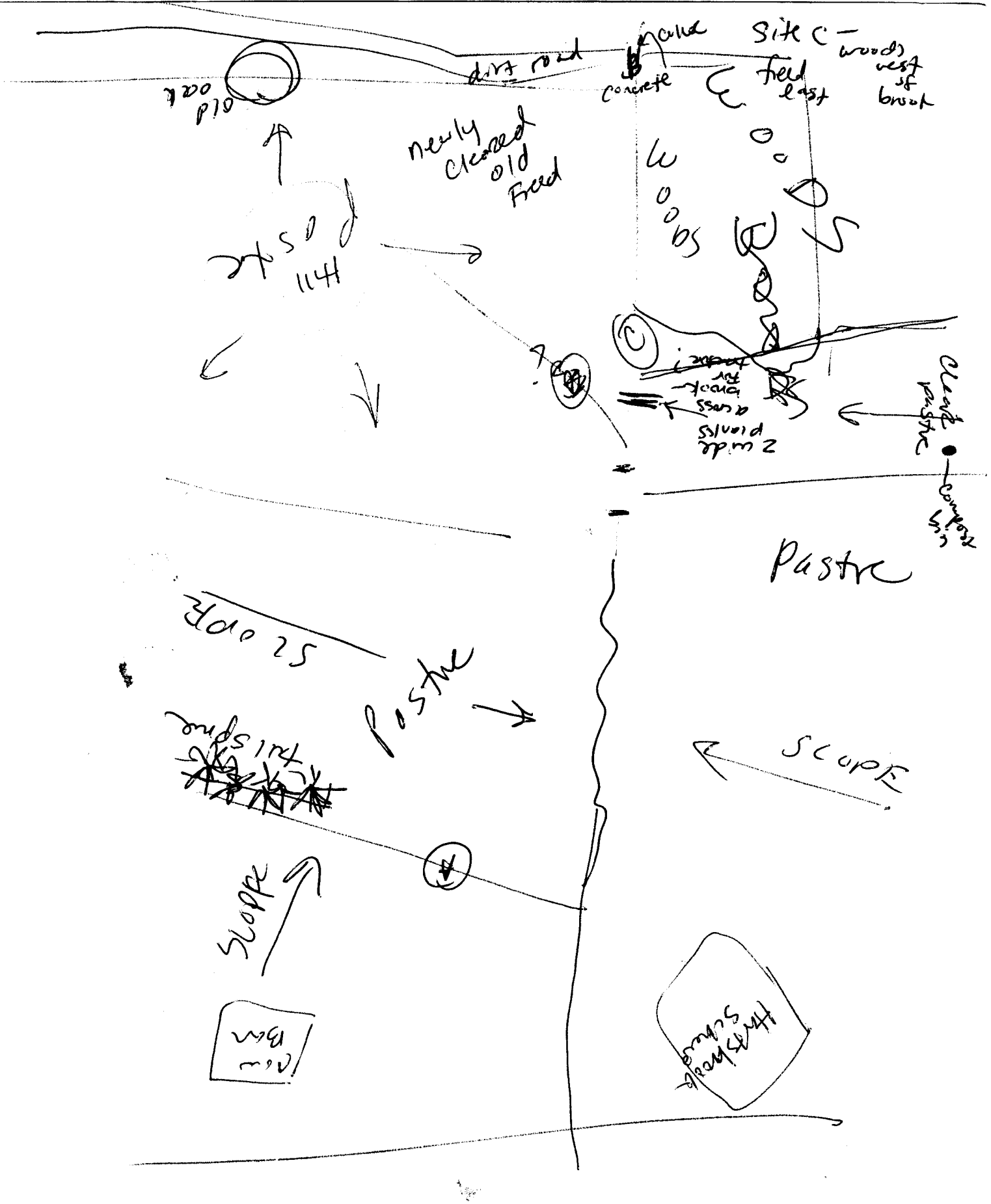
(describe):

H_20 odor: none, rotten egg, gasoline, sewage, detergent, fish, other
(describe):

Any floating debris?
(describe):

Comments:

FRHA – Approximately 40' from brook mainstem, downstream of cow barn


dirt road
concrete
Site C –
wooded west of brook
field east
Pasture
Pasture
Pasture